

# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Vol. VIII.

CHICAGO, ILL., JULY 22, 1908.

No. 1.

## CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Aeme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.

**DEXTER** Portland Cement  
THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia



## UNION MINING COMPANY

Manufacturers of the Celebrated

**MOUNT SAVAGE**  
FIRE BRICK  
GOVERNMENT STANDARD.

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

**Lime Kiln and  
Cement Kiln  
Construction**

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

**UNION MINING CO.,**  
Mount Savage, Md.

CAPACITY, 60,000 PER DAY.  
ESTABLISHED 1841.

## Loading Blasted Rock for 2 cents per Cubic Yard

That's what the Ryan Stone Co., North Baltimore, O. is doing with a Little Giant Steam Shovel. Let us show you how you can do the same. Full information on request

**The Vulcan Steam Shovel Co.** 129 VULCAN PLACE  
TOLEDO, OHIO



**Phoenix Portland Cement** UNEXCELLED FOR ALL USES.

Manufactured by  
**PHOENIX CEMENT CO.**  
NAZARETH, PA.

Sole Selling Agent WM. G. HARTRANFT CEMENT CO.,  
Real Estate Trust Building PHILADELPHIA, PENNSYLVANIA

**MEACHAM & WRIGHT COMPANY**  
**CEMENT**  
CHICAGO

## Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

**OTTAWA SILICA CO.,** . . . Ottawa, Ill.

## "RELIANCE" BELT ABSOLUTELY BEST

**Chicago Belting Company**

MAKERS

12-22:South Green Street

SEND US YOUR SPECIFICATIONS

CHICAGO, ILLINOIS

**ALMA**  
Portland Cement

STANDARD BRAND  
OF  
MIDDLE WEST.

Specially adapted to all Reinforced Concrete and High-Class Work.

**Alma Cement Co.**  
WELLSTON, OHIO.

## Special Features in This Number.

Arrangement for Summer Meeting of the National Lime Manufacturers' Association.

Niagara Park, Chicago, a Wonderland Entirely of Concrete Construction.

Rock Crushing Plant of The United States Crushed Stone Company.

New Hydrating Plant of The Marblehead Lime Company. Built of Concrete.

Sand Knowledge—Third Paper of an Exhaustive Study by James F. Hobart.

"GOLD MEDAL"

**DYNAMITE**

MANUFACTURED BY

**Illinois Powder Mfg. Co.**

St. Louis - Security Bldg. - Missouri

BLASTING POWDER  
AND  
BLASTING SUPPLIES

Quick Shipments Lowest Prices

## A PERFECT RECORD FOR TEN YEARS

IN ALL KINDS OF CONCRETE WORK

Send for 72 page Illustrated Catalog No. 25

**MARQUETTE CEMENT MANUFACTURING CO.**

Marquette Building, Chicago





TRADE-MARK

## Peninsular Portland Cement

Acknowledged by competent Architects and Engineers to be unequalled for fineness, wonderful development of strength and sand carrying capacity.

"THE BEST IS THE CHEAPEST"

Address

Peninsular Portland Cement Co.  
Jackson, Michigan

"The Best is None too Good"



## HIGHEST GRADE of Portland Cement

Every Barrel Absolutely Uniform.

R. R. facilities especially adapted for prompt shipments in the northwest.

Capacity 1,500,000 bbls. Yearly.

NORTHWESTERN STATES PORTLAND CEMENT COMPANY  
MASON CITY, IOWA.

## "LEHIGH" PORTLAND CEMENT

High Tensile Strength, Finely Ground, Light and Uniform in Color.  
MANUFACTURED BY THE

Lehigh Portland Cement Co.

ALLENTOWN, PA

Western Office:  
725 Rockefeller Bldg.,  
CLEVELAND, OHIO

Write for Catalogue.

Capacity, 8,000,000 Yearly.

## Red Ring Portland Cement

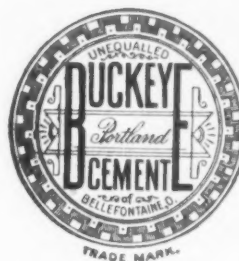


Manufacturers : Sales Office, Liggett Bldg. St. Louis

## Buckeye Portland Cement Co.

ESTABLISHED 1888.

Manufacturers of the celebrated  
"Buckeye" brand of



TRADE MARK

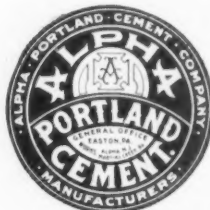
## Portland Cement

"Buckeye" has stood the wear and tear in many important places for the past fifteen years and under the new process of manufacture is now better than ever. :: :: :: :: ::

WE INVITE YOUR  
CORRESPONDENCE.

Bellefontaine, Ohio.

ONE GRADE—ONE BRAND



## Alpha Portland Cement

The Recognized Standard  
American Brand

General Offices: EASTON, PA.

SALES OFFICES:

German National Bk. Bldg., PITTSBURGH. Builders Exchange, BUFFALO  
Builders Exchange, BALTIMORE. Board of Trade Bldg., BOSTON  
Marquette Building, CHICAGO. St. Paul Bldg., NEW YORK.  
Harrison Building, PHILADELPHIA Nat'l Bank Bldg., SAVANNAH, GA.



## CHICAGO "AA"

1,000,000 Barrels Annually

THE LEADING SIDEWALK CEMENT

Factory at Oglesby, near La Salle, Ill., on  
C. M. & St. P. R. R., C. B. & Q. R. R., I. C. R. R.,  
and C. R. I. & P. R. R., by Switch.

WE MAKE ONE BRAND ONLY. THE BEST THAT CAN BE MADE.

Used in the large bridges at Thebes and Kankakee, Illinois, Hennepin Canal,  
Government Post Offices, Locks and Bridges, Chicago Tunnels; and  
by principal Railroads, Engineers, Architects, Contractors and  
Block Manufacturers.

CHICAGO PORTLAND CEMENT CO.

No. 108 La Salle Street, CHICAGO, ILL.

## HYDRATED PORTLAND LIME

IS IDEAL FOR

Waterproofing  
Concrete Blocks

SAVES MONEY. TRY IT.



FOR INFORMATION AND PRICES, WRITE

CHICKAMAUGA CEMENT CO.,

Sole Manufacturers.

CHATTANOOGA, TENNESSEE







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K.K. Nov-09



# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Volume VIII.

CHICAGO, ILL., JULY 22, 1908.

Number 1.



DAM AND WATER FRONT AT HOFMANN'S NIAGARA PARK.

## EXQUISITE ART EXPRESSION IN CONCRETE.

Principal Features of a Permanent Wonderland in Course of Erection Near Chicago.

The first announcement of the construction of Hofmann's Niagara Park at Riverside, near Chicago, has awakened so much interest, accompanied by insistent appeals for further and complete details from prospective promoters of similar enterprises, that Rock Products has the pleasure of presenting the principal features of the construction of this mammoth entertainment plant, which is proceeding as rapidly as well-organized construction teams in the various lines can put up good work, with the expectation of completing the entire group in order to have a grand opening at the beginning of the next summer season.

H. W. Sauber of the H. W. Sauber Construction Company, who are the architects and engineers in charge of the construction, has kindly furnished us with the plans of the buildings now under construction, which give a clear idea of the magnitude of the enterprise as well as the artistic motif that pervades the truly ideal conceptions that will eventually be expressed in more than a hundred buildings.

This is the first time, seemingly, that any amusement park promoter has ever taken into consideration the safety of the lives of the patrons.

George Hofmann, without perhaps realizing it, is doing more for the esthetic development of concrete

than was ever accomplished before. He is erecting a lasting monument to himself, besides establishing a precedent in the construction of amusement buildings which will probably stamp itself upon all future undertakings of this sort. He is a public benefactor in that he has shown that he has faith in concrete and is willing to show that faith by the erection of buildings which for art, beauty, utility and safety have never been equaled. The fire-resisting qualities of concrete being an established fact, he has elected to employ it where the safety of human lives is the first consideration.

By the genius of H. W. Sauber, who has personally designed each and every building, and who is superintending the erection of each structure, Mr. Hofmann has been enabled to make his dream of a pleasure park, at once more beautiful and more safe from fire than any other in the world, come true. Never before has such an undertaking been attempted on such a gigantic scale and all progressing under the personal direction of one man. Mr. Sauber understands the concrete business thoroughly, having made it his lifetime study.

Since the publication of our notice last month interest has been awakened all over the country where

similar amusement places are located. Hardly a city but what has a park, and practically all of the buildings in these parks are frame structures or frame covered with transitory stucco. That there has never been any horrible holocaust resulting from a fire at any of them is extremely fortunate. There have been several of them burned down to the ground, but the conflagrations have taken place while there was no one in the place. The time to lock the stable is before the horse is stolen, not afterwards, and the way to prevent a terrible catastrophe of this sort is to build with the only material known which will not burn.

Building commissioners and fire inspectors should carefully investigate the construction of places of amusement, which are dangerous, generally speaking, to the safety of their patrons. We would especially call the attention of public officers to the plans and specifications set forth herewith as indicating the highest type of amusement park construction, in which the danger element has been reduced to a minimum.

Not only are these buildings safe and strong, but they are beautiful as well. While following in a

(Continued on Page 40.)



SUBWAY UNDER JOLIET AVENUE.



SUBWAY UNDER BARRY POINT ROAD.

Note treatment of Concrete Surfaces.

Can Be Used With Absolute Safety



Hundreds of users have testified to the excellent results obtained.

Manufactured and Guaranteed by

**Omega Portland Cement Company**

Jonesville, Michigan



**Strength  
Uniformity  
Satisfaction**

**A Dependable Portland Cement**

An Unblemished Record for six years speaks for itself

**Wolverine Portland Cement Company**  
Coldwater, Michigan

C. H. WOOD, Agent, Chamber of Commerce Building, Chicago



**Pennsylvania  
Portland**

**Stands for Quality**



Ask for Information Regarding

**“SUPERIOR”**

Before you buy  
Every Barrel gives



your Cement for 1908.  
entire satisfaction.

**Write Us for Prices and Tests**

Guaranteed to meet the requirements of “Standard Specifications.”

**The Superior Portland Cement Co.**

Works:

Superior, Lawrence Co., Ohio.  
Detroit, Toledo & Ironton Ry., within  
switching distance of  
C. & O. and N. & W. Rys.

General Offices and Sales Dept.,  
Charleston, W. Va.

Tell 'em you saw it in ROCK PRODUCTS

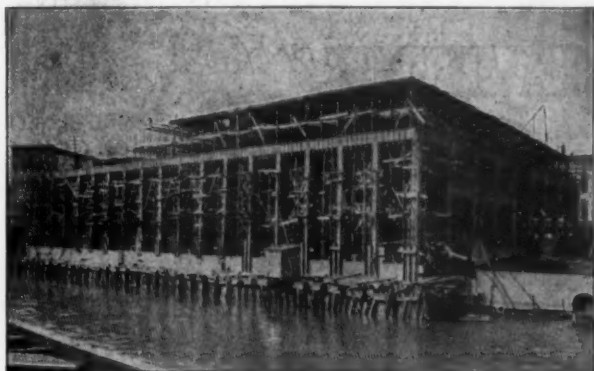




## Medusa Water-Proof Compound

Makes all Concrete Watertight

The foundations and floor in basement, all of cement, in the Bostwick-Braun warehouse, Toledo, O., here illustrated, contain Medusa. Write for pamphlet describing its use.



Write for samples of our Pure White Portland Cement. Do not accept a substitute, as there are many adulterated compounds on the market.

**Sandusky Portland Cement Co.**  
SANDUSKY, OHIO

## The Ironton Portland Cement Co.

Manufacturers of the

Celebrated Limestone Brand of Portland Cement

Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years. Cement as finely ground as any on the market. Guaranteed to pass all the standard specifications.

Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina. Shipments via the N. & W. Ry., C. & O. Ry., C. H. & D. Ry., D. T. & I. Ry. or Ohio River.

Write for Prices

**The Ironton Portland Cement Co.**  
Ironton, Ohio



High Tensile Strength  
Light Uniform Color  
Finely Ground

**CASTALIA PORTLAND CEMENT CO.**  
PITTSBURGH, PA.

PLANT:  
CASTALIA, ERIE CO., OHIO.  
CAPACITY:  
2,000 BARRELS DAILY.

CHARLES L. JOHNSON, Sales Mgr.  
CASTALIA, OHIO



Strength  
Durability  
Permanence

Not only laboratory tests, but results in actual work prove the high grade quality of

**Northampton  
Portland Cement**

Especially adapted for Cement Blocks, Sidewalks and all forms of concrete and re-inforced concrete construction.

**Northampton Portland Cement Co.**  
Main Office and Works  
Stockertown, Pa.



**Concrete Bridge over Choptank River**  
Caroline County, Md.  
Burghouse & Moffatt, Contractors

**Nazareth Portland Cement**  
CHARLES WARNER COMPANY

SALES AGENT  
1 Madison Ave., N. Y., Wilmington, Del., Land Title Bldg., Phila.



*The Quality that Never Fails*

# SUNFLOWER

## PORTLAND CEMENT

Three Great Plants, at IOLA and INDEPENDENCE, KANSAS, making  
Perfect Cement, with Unsurpassed Shipping Facilities,  
Guarantee Prompt Service.

YOUR CEMENT NEEDS CAN BE SUPPLIED EFFICIENTLY

*Daily Capacity of 8,000 Barrels. Write today to*

**United Kansas Portland Cement Company**  
General Sales Office: 811 Commerce Building, KANSAS CITY, MO.

CAPACITY  
700,000  
BARRELS  
ANNUALLY

OFFICE  
ALLENTOWN, PA.



STANDARD  
SPECIFICA-  
TIONS  
GUARANTEED

**Newaygo Portland Cement Co.**

Sales Office: Michigan Trust Building  
**GRAND RAPIDS, MICH.**

Write us for prices. Send us your orders.

### Builders, Attention!

**ART WHITE PORTLAND CEMENT** will pro-  
duce for you artistic effects heretofore impossible

This cement will stand all the tests of standard Portland Cement,  
but is pure white.

In addition to being the very best for general building purposes it  
is unsurpassed for bath room walls, concrete block facing, decorative  
concrete stone for cemeteries, parks, etc., statuary and artistic  
concrete for interior and exterior work of all kinds where richness  
and beauty is an important consideration.

With **ART WHITE CEMENT** you can obtain effects rivaling the  
finest white marble.

We guarantee it satisfactory or money back.

95 lb. cloth bags \$1.50; \$5.00 bbl.

Send us trial order today or write for our booklet on "Artistic Con-  
crete"—free. It tells all about our many lines of builders' supplies  
and our unmatched prices.

**The Bartlett Company**  
110 Bartlett Bldg. Jackson, Michigan

### "TAYLOR MADE"

Trade TISCO Mark

## MANGANESE STEEL

FOR

COMBINED HARDNESS, TOUGHNESS  
AND HIGH TENSILE STRENGTH

— ITS APPLICATIONS —

Crusher Linings, Jaw Plates, Cheek Plates, Cones,  
Concaves.

Power Conveying Parts,—Gears, Sprockets, Sheaves,  
Detachable Link Belting.

Product Conveying Parts—Chutes, Etc.

The "Panama" Two-Part Dipper Tooth for Steam  
Shovels and Dredges.

### "TAYLOR-MADE"

Castings for parts that receive the shock—which MUST be  
machined.

"THE REASONS IN THE STEEL."

It will pay you to review our complete Catalog and literature—Your  
request will have very prompt attention—WRITE US TODAY.

**TAYLOR IRON and STEEL CO.**  
High Bridge, N. J.

Tell 'em you saw it in ROCK PRODUCTS.



**CEMENT PLANT  
CHANUTE, KAN.**

Daily Capacity  
2500 Barrels



# ASH GROVE LIME & PORTLAND CEMENT CO.

KANSAS CITY, MO.

MAKER OF

## Ash Grove Portland Cement

### High Grade White Lime

Furnished in "Unbustible" Steel-Hooped Barrels. Hydrated Lime,  
Snowflake and Canary Brands



**LIME WORKS**

Ash Grove  
Galloway  
Everton  
Carthage  
Greenfield

Daily Capacity 2500 Barrels



## Water Proofing Cement Work

by the addition of

**"Maumee" Compound**

is an established fact. (Licensed, U. S. Patent  
Serial No. 851257.) Write for Particulars

**The Maumee Chemical Company**

512 St. Clair Building

TOLEDO, OHIO

**BEST  
FOR**

STONE SAWING  
ROOFING  
CEMENT BLOCK FACING  
STUCCO  
WHITE PLASTER

## Washed White Flint Sand

Prices, Samples and Freight Rates furnished on  
application. Write us.

**United States Silica Co.**

1044 AMERICAN TRUST BLDG.

Works: Ottawa, Ill.

CHICAGO, ILLS.



Kosmos Portland Cement—is the  
product of a model plant using high  
grade raw materials and under the  
directions of a staff of experienced  
Cement Engineers

It is guaranteed the equal of any  
American Brand of Portland  
Cement and will be found to run  
uniform in color, strength and  
fineness



ANTHONY KUNE, JR., Cincinnati, O. FERRO CONCRETE CONSTRUCTION Co., Cincinnati, O.  
Roth Building, Cincinnati, O., in which "Kosmos" Portland Cement was used exclusively.



**SALES OFFICE**

614 and 615 Paul Jones Bldg.  
LOUISVILLE, KY.

**MILI**

KOSMOSDALE, KY.



Tell 'em you saw it in ROCK PRODUCTS



75% Thru 200---95% Thru 100

# Why?

The only reason for this standard is that it is the commercial limit of fineness for grinding machinery in ordinary use.

85% Thru 200-98% Thru 100

is not the limit of fineness for the grinding machinery designed and installed by Thomas A. Edison at the "EDISON" plant.

When you are ready for it you will get it FINER.

Eckel, "Cements, Limes and Plasters," says:—

"The tendency among engineers at present is to demand more finely ground cement. While this demand is doubtless justified by the results of comparative tests of finely and coarsely ground cements, it must be borne in mind that any increase in the fineness of grinding means a decrease in the product per hour of the grinding mills employed and a consequent increase in the cost of cement."

## EDISON PORTLAND CEMENT CO.

### SALES OFFICES:

New York, St. James Bldg.  
Philadelphia, Arcade Bldg.

Boston, Post Office Square Bldg.  
Pittsburgh, Machesney Bldg.

Newark, N. J., Union Bldg.  
Savannah, Ga., Nat'l Bank Bldg.

Eminent authorities all agree that the finer the clinker is ground, the better the cement.

It costs more to grind  
10 per cent finer, but—

# "We Don't Care!"

**"FINENESS:** The finer a cement is ground, the better its quality. Water acts only on the finer particles, while the coarser particles are almost always inert. The finer a cement is ground the greater will be its covering capacity, therefore the greater its value as a cementing material. To produce the greatest strength each particle of the aggregate should be covered with cementing material. The greatest economy, other things being equal, will result when the cement is as fine as possible. However, while fine cement is more valuable than coarse, fine grinding increases the cost of manufacture, hence there is a limit to the amount of grinding which can be done economically. Again, a finely ground cement is less apt to blow or disintegrate than a coarse one, since the free or loosely combined lime being in fine particles is thoroughly broken up and readily rendered innocuous by the water when it is added."

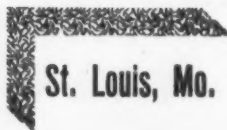
H. A. REID, Assoc. M. Am. Soc. C. E.

Ass't Engineer Bureau of Buildings, N. Y. City, in  
"Concrete and Reinforced Concrete Construction."

## CHARLES W. GOETZ LIME & CEMENT CO.

MANUFACTURERS OF AND DEALERS IN

Glenwood Lime, Banner  
Brand Louisville Cement,  
Portland Cements and  
Building Materials.



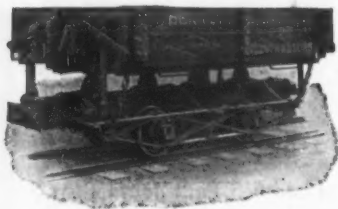
St. Louis, Mo.

## FOWLER & PAY,

Brown Hydraulic Lime, Austin Hydraulic  
Cement, Jasper Wall Plaster, Brick, Stone.

CEMENT WORKS: Austin, Minn.  
PLASTER MILL: Ft. Dodge, Iowa.  
WAREHOUSE: Minnesota Transfer.

MANKATO, MINN.



## "CONTINENTAL" DUMP CARS

Our Dump Cars are used on most of the large rock and dirt moving operations throughout the United States and Canada.

Continental Car and Equipment Co.

Works: Highland Park, Louisville, Ky.

New York, 17 Battery Place



## Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.  
MANUFACTURERS OF THE

### Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all.

HIGH GRADE FINISHING WORK

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.

Flint Pebbles and Buhr Stone  
Ltnings.

French Buhr Mill Stones,  
Solids and Built.

## J. M. Charles,

Sole Agent.

59 Pearl St., NEW YORK, N. Y.

Bolting Cloths, Dufour Swiss  
Silk, Fine Wire Cloth.

Mixing and Sifting  
Machinery.

Tell 'em you saw it in ROCK PRODUCTS.



**"IT"**

**Automatic**

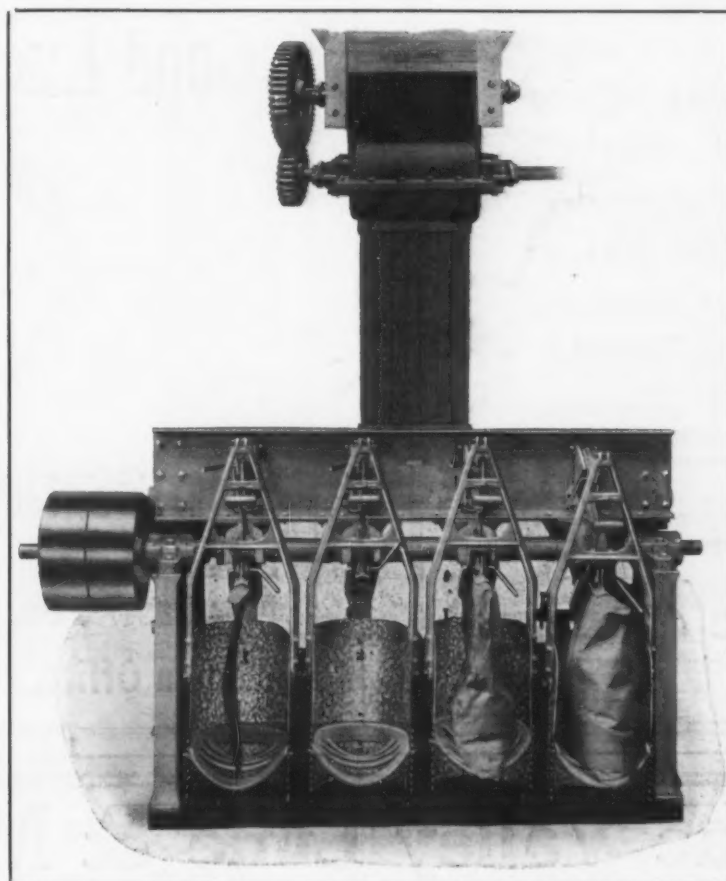
**All Iron**

**Can't Be Beat**

**Try It**

**Ask**

**We Know**



**Patented**

**Weighs Exact**

**Paper or Cloth**

**No Dust**

**Best**

**You'll See**

As much superior to other machines  
As the modern press to Franklin's seems,  
The Urschel-Bates Lime Bagging scheme  
Beats out all others and keeps you clean.

Maybe you don't hydrate your lime,  
And if 'tis true, must say it's time  
To start it going in your slow plant  
And save its being an elephant.

Your customer wants it; if not he will,  
His orders you'll be unable to fill;  
He'll buy of those who can sell him.  
Take our advice: "Get in the swim."

We can bag 150 tons of lime in ten hours with the above device or 75 tons with one half its size. Fills cloth bags as well as paper.

We'll tell you more about it if you'll look us up.

Ask for Urschel or Spencer when you are  
at the National Lime Meeting at Cleveland

**The Urschel-Bates Valve Bag Co.**

**Toledo, Ohio, U. S. A.**

Tell 'em you saw it in ROCK PRODUCTS

## MITCHELL LIME

Is Chemically Pure and Practically Free from Waste

The Strongest White  
Lime on the Market.  
Used and recommended  
by Sand-Lime Brick  
Manufacturers, Chemists,  
Soap and Glue Works,  
Plasterers and Masons.

*Prices Cheerfully Submitted*

**Mitchell Lime Company**

MITCHELL, :: :: :: INDIANA

## Burton Powder Co.

MANUFACTURERS OF

### Good Luck Dynamite



AND

### Blasting Powder

Dynamite Factory: Powder Mill:  
New Castle, Pa. Quaker Falls, Pa.

Main Office, PITTSBURGH, PA.

## The Hoosac Valley Lime & Marble Co.

=====ADAMS, MASS.=====

Manufacturers of

### ....High-Grade Finishing Lime....

Noted For Its Quick and Even Slacking.

Now in Use in Some of the Largest Buildings Being Erected in New York City.

THOS. D. CONNORS, President.

Telephone  
Connection

New York Office: 1123 Broadway.

## HIGH CALCIUM HYDRATE

The Best for Every Purpose where Chemically Pure Lime Is the Indispensable Element

**Sand Lime Brick**

Difficulties can be Simplified and Overcome  
by the use of our Correctly Hydrated Lime.

**Cement Blocks**

can be made more waterproof, cheaper, and of lighter color by the use of from 20 to 40% of pure hydrate free from  
magnesia. This substitutes the same amount of cement and does not impair the strength of the block.

**Water Softening and Filtration**

in municipal and industrial plants. Our hydrate increases the efficiency of oper-  
ation, enables exact determination and offers numerous economical advantages.

Commercial and chemical requirements call for pure lime. We furnish a product of 98% analysis.

Kansas City

**MARBLEHEAD LIME CO.**

Chicago

Tell 'em you saw it in ROCK PRODUCTS.

"THE QUARRYMAN FINDS A NEW STANDARD  
OF QUALITY IN INDEPENDENT"



**INDEPENDENT POWDER**  
COMPANY OF MISSOURI

HOME OFFICE · JOPLIN · MO.  
FACTORY · · · JOPLIN · MO.  
GENERAL SALES OFFICE · ·  
PIERCE BLDG. SUITE 655-67 · ST. LOUIS · MO.

**DU PONT**  
**EXPLOSIVES**

**GIANT POWDER**  
The Standard Brand  
For Quarry Work

E. I. DU PONT DE NEMOURS POWDER CO.  
WILMINGTON, DEL.

OFFICES:

NEW YORK	PHILADELPHIA	CHICAGO
BOSTON	HUNTINGTON	JOPLIN
SCRANTON	PITTSBURG	DULUTH
HAZELTON	CINCINNATI	HOUGHTON
NASHVILLE	TERRE HAUTE	MARQUETTE
BIRMINGHAM	ST. LOUIS	KANSAS CITY



# AETNA DYNAMITE

**The Standard Explosive  
Always Full Strength  
Always the Same**

Send for new 66 page Blasting Manual

MADE BY

**THE AETNA POWDER COMPANY**

143 DEARBORN STREET, CHICAGO

Bank of Commerce Building  
ST. LOUIS, MO.

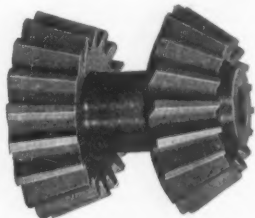
CHATTANOOGA, TENN.  
XENIA, OHIO

Woodward Building  
BIRMINGHAM, ALA.

Tell 'em you saw it in ROCK PRODUCTS.



Do you like to experiment?

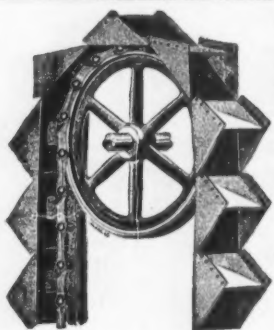


Nuttall Gear products are intended for those who prefer to let the manufacturer do all the experimenting before going upon the market.

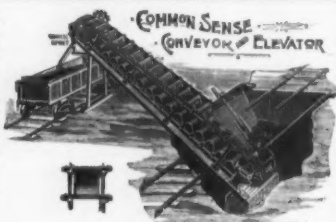
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**THE GENERAL CRUSHED  
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have been using one of our Common Sense Elevators for six years—  
capacity 400 tons an hour.

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## FIRE BRICK

For Cement Works, Lime Kilns, Cupolas, Steel and  
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**Louisville Fire Brick Works,**

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ALL SHAPES

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Fire Clay, Wall Coping, Etc.

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Blocks

In hot zone and our special fire-clay blocks throughout the rest of Kiln can be run  
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Write for booklet describing Bauxite Linings for Portland Cement Rotary Kilns.

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We number among our customers many of the large Lime and Gypsum Manufacturers of the Country.

Sewer Pipe, Wall Coping, Hollow Tile  
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# The Kelley Island Lime and Transport Co.

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**Tiger Brand White Rock Finish the best known and smoothest working Hydrated Lime manufactured.**

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**THE LARGEST LIME MANUFACTURERS IN THE WORLD.**

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**WORKS AT**

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**Ohio White Finishing Lime, Ground Lime,  
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8000 Barrels  
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DOES NOT DETERIORATE WITH AGE.



WILL NOT SLACK. ALWAYS READY FOR USE.

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**A PRODUCT OF MERIT.**

The best prepared Lime in the market. Is superior to hot Lime for all purposes. Will not deteriorate. Absolutely pure and free from foreign ingredients. Successfully used for years by the largest users of Hydrate in the country.

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# A. & C. Stone & Lime Co.

MANUFACTURERS OF

**CRUSHED STONE AND WHITE LIME**

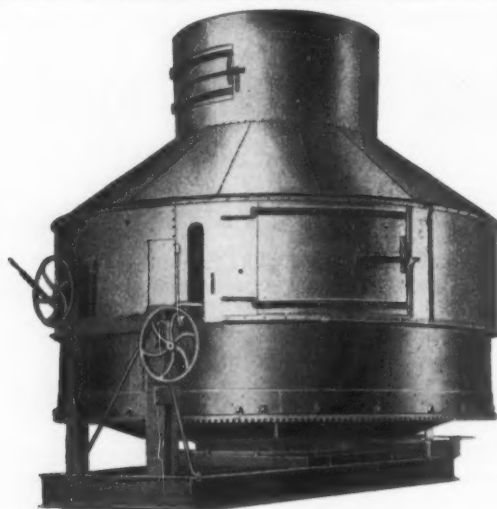
**Total Capacity Crushed Stone 4000 Tons Daily**

**Plants:** GREENCASTLE, IND.  
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**Lime Kilns at**  
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## The Clyde Hydrator

is the accepted standard of highest efficiency, economical operation, positive results and general all around serviceability in hydrating machinery

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They have proven their merit under all conditions

We will furnish full information, booklets and interesting data on your request

*"We like to answer questions"*

### CLYDE IRON WORKS

Manufacturers

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## Gas Process for Burning Lime.

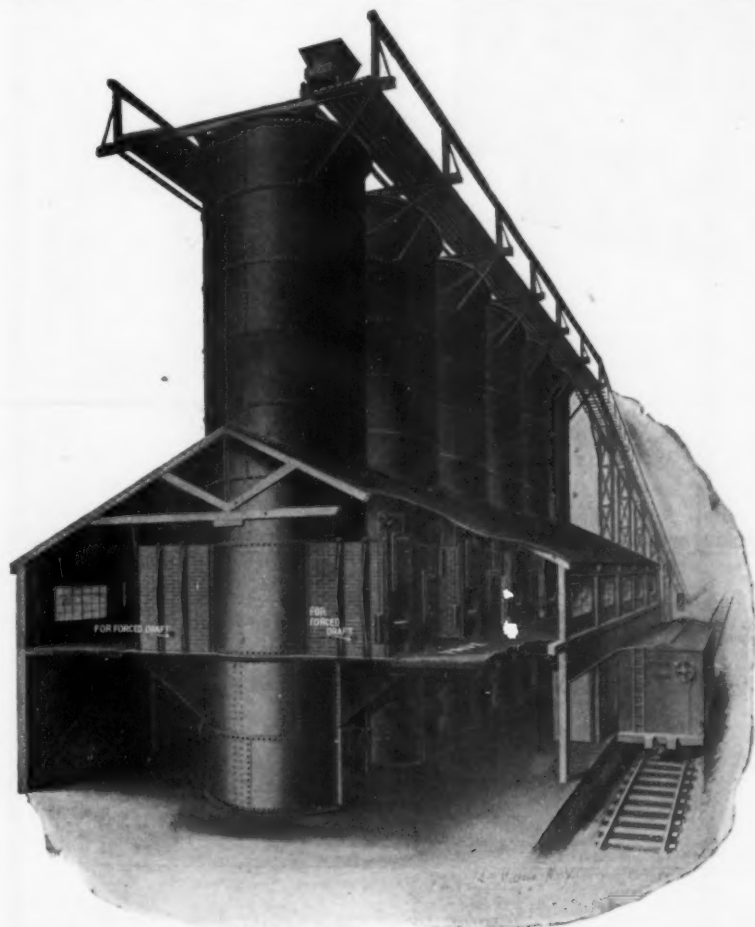
Four and three quarter pounds of lime to one pound of coal on a large output is now being secured every day.

**Does that look like economy to you?**

=====SUCCESS GUARANTEED=====

We will be represented at the Lime Manufacturers meeting at Cleveland.

**Duff Patents Company** Frick Building  
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## Keystone Lime Kiln

BROOMELL'S PATENT

This illustration shows a battery of six Keystone Lime Kilns set up complete ready for operation. No foundations being required and no stone work above the ground level, the kilns can be set very close together. Each kiln is arranged with four furnaces which are supported on heavy brackets. These same brackets support the timbers on which the firing platform is built, the timbers extending out to the edge of the building and supported on posts. The firing platforms are bricked from end to end, making ample room for firing and storage of coal. The ground floor on which the lime is discharged is entirely clear from posts or other obstructions. Note the substantial manner of supporting the platform on top of the kilns. Send for catalogue.

**Broomell, Schmidt & Steacy Co.**

**YORK, PA.**

Tell 'em you saw it in ROCK PRODUCTS.

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No tying of paper.

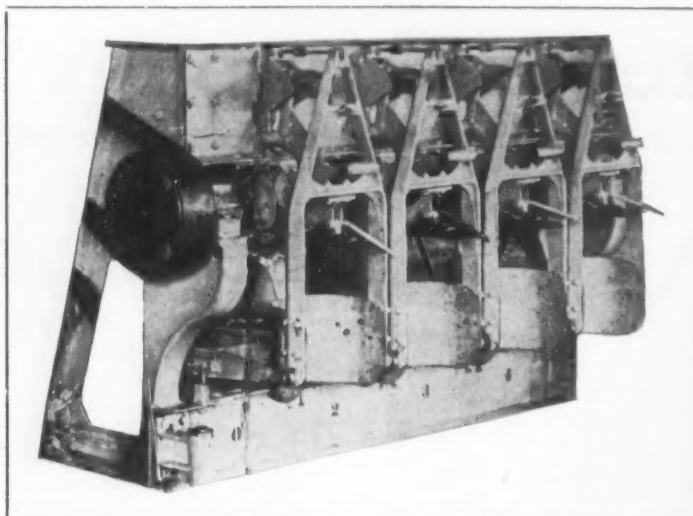
Cotton tied by machinery.

Three men can fill and load in car 800 barrels daily.

Weights best the business has ever known.

Saves thousands of dollars in string and overloading  
of sacks.

Not half the dust caused by old methods.



Write for proposition.


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If YOU will give us a trial  
WE will prove that RE-  
SULTS follow an Ad. in our  
paper.



**DRYERS**  
OF EVERY TYPE  
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## Industrial Plants



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We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

Catalog No. 28.

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17th St. and Western Ave., Chicago

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NEW YORK CITY

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**The Davenport Locomotive**  
Will Save Money



Special Designs for Special Purposes

Any Size, Any Gauge, Any Weight

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DAVENPORT, IOWA

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## Portland Cement

ON THE

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**Coal, Water and Good Labor**

For Full Particulars Address

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No. 1 PARK ROW, CHICAGO

Tell 'em you saw it in ROCK PRODUCTS.



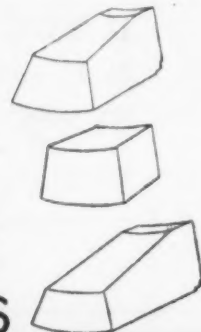
# ROTARY CEMENT LINERS.

**ASHLAND FIRE BRICK CO.**  
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## LIME KILN LININGS.

GROUND CLAY  
FOR  
WALL PLASTER  
AND  
BOILER SETTINGS

IRONTON CROWN.



**DIRECT HEAT**

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—FOR—

**BANK SAND  
GLASS SAND  
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COAL, ETC.**

**All Mineral, Animal and Vegetable Matter.**

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**RUGGLES - COLES**

# DRYERS

**RUGGLES-COLES ENGINEERING CO.**

NEW YORK

CHICAGO

**The Cummer Continuous Gypsum  
Calcining Process**

See Other Advertisements, Page 64

THE F. D. CUMMER  
& SON CO.  
Cleveland, Ohio

Seven plants in successful operation producing about 1,500 tons per day.

## BRICK and MORTAR COLORING

After twenty years "CLINTON" colors still stand at the head. Get the genuine, with the "Little Yellow Side-Label."

CORRESPONDENCE SOLICITED.

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### CONCRETE BLOCKS

Absorption 6 per cent, Weight 170 Lbs. Cu. Ft., Strength 2400 Lbs. at 28 Days. If you can't make 'em of Shale Gravel and 10 per cent Cement,

Then Write To

**JAMES F. HOBART**  
CEMENT & SAND-LIME ENGINEER  
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### For Immediate Shipment

Austin Gyratory Crushers.  
Austin, Western and Aurora Jaw  
Crushers.  
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Sterling Wheel Barrows, Concrete  
Mixers.

A lot of bargains in rebuilt crushers,  
all sizes and kinds.

Write for prices and catalogues.

**The Williams Contractors Supply Co.**  
COLUMBUS, OHIO

**Now is the TIME  
to ADVERTISE**

**C. K. WILLIAMS & CO.**  
EASTON, PA.

The Largest Manufacturers in the U. S.

**BRICK AND MORTAR  
COLORING**  
OF ALL SHADES

CORRESPONDENCE SOLICITED. SAMPLES AND ESTIMATES  
CHEERFULLY FURNISHED ON APPLICATION.



Lime Kilns and Plant of Blair Limestone Co.,  
Canoe Creek, Pa.

Designed by

**Henry S. Spackman Engineering  
Company**

42 N. 16th Street

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# ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume VIII.

CHICAGO, JULY 22, 1908.

Number 1.

## THE FRANCIS PUBLISHING COMPANY

EDGAR H. DEFEBAGH, *Pres.*

Seventh Floor Ellsworth Bldg., 355 Dearborn St., Chicago, Ill., U.S.A.  
Telephone Harrison 4960.

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Communications on subjects of interest to any branch of the stone industry are solicited, and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago. Editorial and advertising copy should reach this office at least five days preceding publication date.

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### BRANCH OFFICES:

NEW YORK CITY, Room 417 St. James Bldg. NEW ENGLAND, 16 Merchant St., Barre, Vt.  
PHILADELPHIA, Pa., 916 Rothschild Bldg.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

If politics has anything to do with prosperity, the politicians now have a splendid opportunity for making good. Every voter in this republic will be glad to be shown.

It is gratifying to observe that the most eminent engineers of the world regularly come forward and advocate the combinations and methods that ROCK PRODUCTS offers from time to time in the study of materials, and which are usually the reflection of progress developed at the practical end. This is the natural, logical way, for the requirements of practice must ever suggest the problems for science to perfect and finish.

Don't let your interest flag in the promotion of the improvement of the internal waterways and the conservation of natural resources. These improvements not only call for a great deal of material and employment, which would be argument enough, but the benefits to agriculture and commerce are incalculable. At the contemplation of the possible results even such large expenditure shrinks to a bagatelle by comparison.

It is time to cut out that pessimistic talk.

Be a booster and get in the procession of progress.

The material market is steady again and advances are imminent.

The man who cannot realize this will never know it until some of the opportunities have slipped by.

Get on the watch tower and train your glass on those big improvements that have been held in suspense for six months or more.

No material, however perfect it may be or adaptable to the purpose for which it is intended, can be made fool proof. The fireproofing experts are not given to admissions, probably because of the insurance premiums and other trifles such as fees, but the investor who puts up the money has observed a number of facts and is putting them together into thinks that result in keeping the concrete engineers working overtime, even in periods of depression in the construction business. It is altogether probable that in concrete we have the most perfect fire resisting material that can ever be produced, and it is now easy to "cut the cloth" so as to obviate both loss and danger.

The annual crop movement is about to begin, and this means that cars for the shipment of manufactured merchandise of every character

will be just about as scarce as snow balls in June. It will obtain from now on to the close of the season. The threatened raise in freight rates is scheduled to go into effect in August, and it is the little plan of the railroads to fill their coffers with the business that originates on the farm, while they work their gentle system on the manufacturers. The scheme is quite transparent, and it is up to you, Mr. Manufacturer and Mr. Shipper, whether you will stand for being bumped or not. If it is too late to prevent the schedules from going into effect, take a receipt under protest and come up for a refund after adjustment. There is no reason why the railroads should have the privilege of seizing enough of the manufacturers' money to make up the deficits created by their own lack of organization and foresight. By the way, who made the recent business depression, if the railroads were not parties to it?

In spite of the backward season a steady improvement in the character of completed concrete work proceeds. The artistic treatment of surfaces which one year ago was little more than a suggestion, is being developed and perfected upon a tremendous exposition scale by a Chicago designer and engineer. He is securing astounding results by cutting bush-hammered panels in plain surfaces and bringing out what is known to architectural art as tooled relief work by means of gelatinous molds.

One standing objection in the past to the use of concrete has been the tiresome sameness of color and flatness of surface, to the extent that the æsthetic sense has been offended by all of the early models, where utility alone was taken into consideration. The studies of the past year have entirely wiped out all such objections, and a new vista of absolutely new suggestions and possibilities has arrived, provoking the liveliest interest of real artists who have long sought new fields to conquer.

Behold, the new material is flexible to the command of genius, far beyond the fondest dream of ancient modelers. To the designer of today is given a plastic mass that will assume any desired form, almost as readily as water, and acquiring with astonishing economy entirely new surfacing effects—produced in color, in contour and in combination practically *ad libitum*.

Concrete, the fireproof, flexible, art inspiring medium has assumed its position as the one universally adaptable structural material.

The summer convention of the National Association of Lime Manufacturers, which will be held at Cleveland in August, promises by every indication to be the most representative assemblage of the several units that make up the great industry that ever came together in this country. It looks as if ninety per cent of the lime manufactured in the United States will have a representative at this meeting. From the Atlantic to the Pacific and from Canada to the Gulf the lime burning clans will assemble.

The details of the program are announced upon another page, but this is only a sketch, for the discussions which follow the various papers, which are merely the text of the study taken up, has already produced wonders. Those doubters who still hang aloof from such a movement can never know what they have missed, but will only increase their habitual grouch when they find a live member surely and steadily forging ahead.



## EDITORIAL CHAT

Among the distinguished visitors to the editorial sanctum this month was Horace G. Kimball, of the Kent Mill Company, 170 Broadway, New York. Mr. Kimball was on one of his Western trips and spoke encouragingly of the general situation. The Kent Mill Company do not know what it is to be dull, as it is seldom that they are able to catch up with their orders. Mr. Kimball is an expert on the subject of pulverizing materials for the purpose of manufacturing lime, plaster and cement, and his advice is frequently sought and always freely given.

All of the heads of departments of the Universal Portland Cement Company were gathered in Chicago last week at the farewell dinner given to E. M. Hager, the President of the company, who left shortly after for New York, where he boarded one of the fast Trans-Atlantic liners to Europe. Mr. Hager has not mapped out his itinerary, but expects to be gone about two months, during which time he will in all probability visit many of the famous European cement plants.

E. W. Lazell has severed his connection with the Henry S. Spackman Engineering Company, and has started in business for himself as a consulting and chemical engineer, with offices in the Land Title Building in Philadelphia. He will make a specialty of testing and investigation work for the lime, cement and sand lime brick manufacturers. Mr. Lazell is well known to the trade and his many friends will join with us in wishing him every success in his undertaking. He expects to attend the next meeting of the National Lime Manufacturers' Association at Cleveland August 12-13.

Among the visitors at Chicago this past month was Ed Baltes of E. M. Baltes & Co., Fort Wayne, Ind. Mr. Baltes stated the building material business at Fort Wayne had been very good considering general conditions. All dealers had been busy, Ft. Wayne being a thriving city. Mr. Baltes' errand in Chicago was to purchase a new crusher for their crushed stone plant at Montpelier.

William Jennings Bryan was nominated for president in a concrete building. It is the first presidential nomination that has occurred in a building of such construction.

S. G. K. Stradley, sales manager of the Penn-Allen Portland Cement Company, Allentown, Pa., says the long dull period looks as if it was about over.

Harry B. Warner, sales manager of the Maryland Portland Cement Company, Baltimore, is a busy man these days getting the new plant into operation. It is always a trying time, of course, but Harry has "been through the mill" so many times that it is an old story with him.

A. W. Eisenmeyer, the well known supply dealer of Granite City, Ill., was circulating in Chicago last week. He is no pessimist by any means, but admits that he has observed a dullness. Incidentally he was looking for a party in need of storage space, having a big warehouse with unsurpassed railroad facilities for economical distribution. It is somebody's opportunity.

Fred Paulson of the Indianapolis office of the Lehigh has sent his family to northern Michigan summer resorts to rusticate. Of course he will work twenty-four hours now. He says the big Mitchell mill is working to capacity.

See the prophecy contained in our business thermometer. The rise is steadily growing.

Pierre A. Kypke has accepted a position with J. C. Van Doorn, sales manager for the Universal Portland Cement Company, Minneapolis, Minn. Mr. Kypke is a late graduate of the State University at Madison, Wis., and will travel in the Northwest in the interests of the Universal Portland Cement Company.

A. A. Pauly, the inventor of concrete structural tile and sewer pipe by the poured system, was in Chicago recently. He says his big tile factory at Youngstown is working overtime to take care of the business that is rolling in for this newest concrete building material. In spite of the much talked of depression his proposition has won out by the route of high merit and reasonable profit.

Gust Lillyblad, Red Wing, Minn., is running his lime plant to capacity, which is approximately 6,000 barrels per month. Mr. Lillyblad operates extensive lime stone quarries in addition to his lime business, and his business has been established since 1880.

A paper read at the recent meeting of the American Society for Testing Materials upon the subject of Sand in connection with cement mortars and concrete is the best contribution upon that most important subject, which has never received the proper amount of attention. The paper was by H. M. Spackman and Robert W. Lesley. It will have a lasting influence upon future specifications.

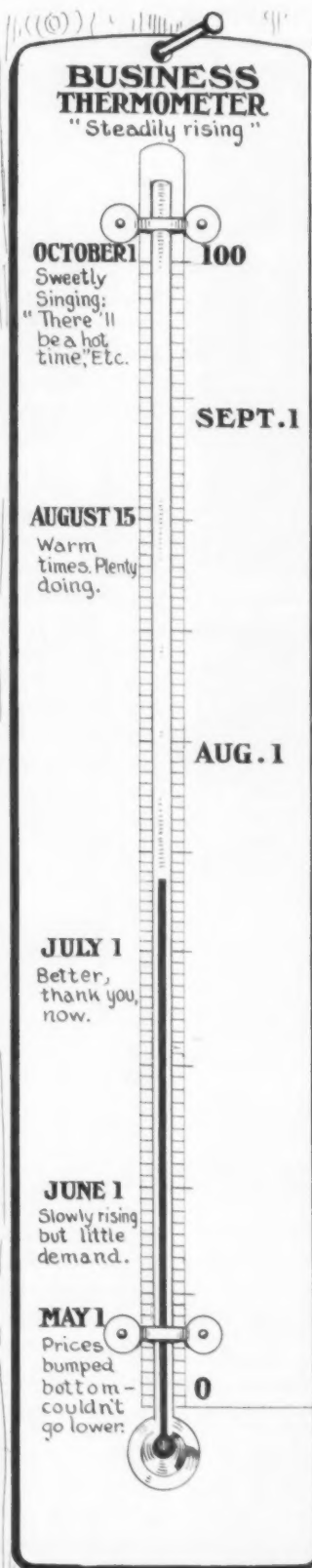
Caleb Gowan, president of the Kelly Island Lime & Transport Company, Cleveland, Ohio, is taking a little rest and recuperation by the route of a sight seeing trip on the continent of Europe.

Before the actual conflict of the campaign begins we are all called upon to realize that Bryan and Kern and Taft and Sherman have entered the lists as the representatives of their respective parties for the November election, when the head of one of these tickets will be elected chief magistrate of the nation. The platforms or declarations of principles on which these candidates are running have been the subject of considerable scrutiny and criticism. We are willing to leave it to the chipmunk in the top of an old gum tree to tell us what either of these platforms contains. If ambiguity, circumlocution and positive determination not to make an utterance of any kind were the chief objects of the framers of these monumental documents they could not have been more perfect. It is clear that both the Democratic and Republican parties were afraid to take any other course than to indorse Mr. Roosevelt's policies. Further than that, they climbed over the fence and crawled under again. When it came to such things as injunctions or the control of corporations both parties ducked their heads under the water so deep that we are led to suppose they are still stuck in the mud at the bottom.

In handling the labor question both committees were as careful of Gompers and his crew as if they were afraid of insulting a high-born lady, for you know the lady may sometimes insist on being insulted whether she is or not, and that is usually the case with Gompers and the so-called labor element, who are remarkable for nothing so much as the fact that none of them was ever known to labor or do anything that looked like work except to work conventions and to insist on parliamentary agreements with employers in order to provide for as little work as possible for the greatest amount of pay. Now, just how these platforms will be interpreted by the spellbinders of the two parties will depend absolutely on what particular section of the country you may be in when you hear the interpretation.

It is said that Mr. Roosevelt dictated the Republican platform and that Mr. Bryan dictated the Democratic platform. Now, if this goes, both gentlemen should be ashamed of themselves for producing big documents that accomplish about as little as so much blank wrapping-paper. Platforms in these days have come to have too many planks. What this country needs is a single plank walk that leads back to prosperity. Why all these overlapping diagonals and twisted planks—planks with knotholes in them so big that the Democratic jackass or even the Republican elephant can put his foot through them—is quite beyond the comprehension of the average citizen of this country. In fact, it is likely that the committees that framed these platforms do not understand the thing themselves, and each and every spellbinder is free to interpret as he pleases. And the voters will do likewise.

Of course, it is a very one-sided affair, but the famous saying that Shakespeare put in the mouth of Puck, the sprite of the sunbeam, is emphasized by a perusal of these documents: "What fools these mortals be!" Now, this little diatribe on politics is written lest peradventure some of our friends may get overheated during the warm period of the campaign by getting excited over politics. ROCK PRODUCTS has never been a political paper, and it is less so now than ever before. We are prosperity boomers, and that is the kind of torchlight procession we would like to assist in organizing, and in which we will do yeoman service wherever we get a chance. This year politics do not cut any ice whatever. It is commercial activity we want, and we want it quick. The fellows who are holding up the money want to let go of it so as to start things moving, and if we cannot have that there will be very little interest taken in the coming campaign. In other words, if the politicians have got anything to do whatever with the business prosperity of the country, it is up to them right now to show how quick they can turn the trick. If they cannot, it won't be long before everybody knows it.





# FOR THE SALES AGENT

## Salesmanship.

In an address on this subject W. E. Gerow of the Atlantic Supply Company, Jacksonville, Fla., said:

I have been asked to speak on a subject that is of vital interest to each of us as business men—it is "Salesmanship." What an important part of modern commercialism this word covers! It is not a new art—it is as old as history and was a distinct part of the life of prehistoric man—for when did not man exchange the result of his skill or something he possessed for something else that seemed more desirable in his eyes? If this "exchange" resulted in mutual advantage and satisfaction was it not a successful "sale"? And was not the same principle used that is involved in every modern sale? When the Indians sold the Island of Manhattan for some corn and rum, were they not convinced that what they were receiving was of equal value to that which they were giving?

While only a comparatively small number follow "salesmanship" as a vocation—still, it is true, that the principle of salesmanship enters the daily life of almost everyone, and is essential to human relations. The thought that someone else needs what we can give and we need what they can give us in return, is the incentive to the daily action of most people. Then of what does the art of doing this successfully consist?

Every sale is first a mental process, something like this: You have something to sell—you select some one you think would buy it—you convince him he needs it, then you make the sale. "Salesmanship," in the abstract, is the power of persuasion, therefore successful sales depend very largely upon the personality of the salesman, for in a man's personality lies his persuasive power—the power to convince another that what he says is honest and true; or in other words, to inspire confidence. Confidence is absolutely essential to bring and to hold trade; in fact, it is the cornerstone in building up right conditions and relations among mankind. Confidence is won only by a forcible, firm personality or character.

The time-worn adage, "Salesmen are born, not made," is much to blame for the fact that the principle of "Salesmanship" has not been more investigated. Business men, as a rule, have searched for so-called "natural born salesmen," thinking that was the only variety. The true salesman is not the one who starts out thinking he is "naturally fitted" for it, but the salesman who studies his vocation from a scientific standpoint and knows how and why he sells goods.

The best salesman is the one who develops his mentality and brings out the latent potentialities of his mind. All men have the same sets of muscles, but some of them develop certain sets and some few all of their muscles, to an unusual degree, through training. Just so all men have "intellectual muscles" which can be developed through activity or weakened through disuse, just the same as the physical muscles. The dormant mentality can be made available, for the intellectual muscles of every man can be educated to work for him, to advance him higher in the world and win for him success and power. The would-be successful salesman should study "salesmanship," or the power to make others think as you think and believe as you believe; and as he progresses, in-grafting into his experience the knowledge gained day by day.

It is the man who realizes this that is qualified the most in his chosen lines. No longer is it the "jolly good fellow" who sells the largest bill of goods, but the clean-cut intellectual man who knows his goods and knows them to be good. The most successful man is the one who brings into activity all his reserve forces. This he can do by training his judgment, his memory, his reason and his faculty of observation and intuition. He must also have a good supply of ambition, self-reliance, enthusiasm and determination. He who is thus equipped is prepared to skillfully control situations, not only by taking advantage of favorable circumstances, but by being able to help smooth out the rough places in the "business highway." For it is in coping with trying situations that the best qualities of a man are brought to the surface. The man who is the most "manly," the one with the largest stock of admirable qualities, is the one most searched for and the most valued when found, both as an employer and as an employee. So,

why not cultivate such valuable assets? Business in general and "Salesmanship" in particular, depends upon the personality of the man. Personality can be cultivated.

The other factors that are included in a sale are, besides the salesman—the customer, the goods and the business transaction called the sale. The salesman first finds his customer, then he must know how to "read" him, or in other words, "size him up"; that is, find out all he can about him from external appearances. Here is his opportunity to use his intuition and observation. The next step is to get his attention and arouse his interest in the salesman and in his goods, and if he has effectively delivered a logical "selling talk" he has caused a desire for the goods. Then he has successfully "handled" his customer.

It is absolutely essential that he thoroughly understand the goods he is selling and be able to honestly recommend them. In his study to understand his goods he must analyze them into the points that will recommend them, or make "selling points." It is here that a man's personality counts for much and is manifested in forceful expressions, persuasive manners and logical arguments. The wise salesman is not tempted by the desire to criticize another's goods. Such conduct does not sell goods for him.

It is the man whose personality is built on the



PAUL C. SMITH, CHICAGO,  
Who Sells Plymouth Gypsum Plaster.

solid rock of honesty and intelligence, whose calm strength and serenity cannot be overcome by crowding competitors or the rebuffs of customers.

Last, but not by any means least, is getting the order signed and the "sale" is complete.

Another important feature in salesmanship is the harmony that should necessarily exist between the salesman and his "house." This can be divided into—what the house expects of the salesman and what the salesman expects of the house. The house expects the salesman, first of all, to be thoroughly up-to-date and reliable in every particular, and at all times to have their interests at heart. For he has in his hands the power to add or to take away from their reputation. They also expect him to keep well informed along all lines that will further their interests and to secure for them prestige in the business world. It goes without saying that the salesman is expected, first and last, to sell goods. He should be, to a great extent, the "credit man" of his firm, so that in using his judgment and reason there will follow, as few as possible cancellations, bad bills, debts and the like. The salesman expects the house to give him a "square deal" in every way and to give him a fair chance to use his personal ability, judgment and reason. He also expects the house to furnish him all information relative to the cost of goods and to keep him posted as to the condition of their stock on hand and in transit.

If the salesman and his house work in perfect harmony, as they should, the business and the customers are both well taken care of, and the principle of salesmanship is proven to be fundamental in business relations.

Paul C. Smith is one of the popular plaster salesmen, and one of the Smith family well known in the trade. He has been in the plaster business for the past fourteen years. First starting into the business with his father at Decatur, Ill., in 1893, in a small "mixing plant," buying their crude materials on the open market and making what is called "prepared wall plaster." In 1895 he came to Chicago and took charge of the manufacturing end of the old Rock Plaster Company of Chicago, serving one year in that capacity. After this he took charge of the office work of the same concern till 1900; he then went "on the road" for the same people, traveling in Illinois and Indiana. In 1902 the United States Gypsum Company was organized, and the Rock Plaster Company of Chicago was absorbed by them. He continued traveling in Illinois for that concern till 1905, and has been with the Plymouth Gypsum Company ever since, having all the territory east of the Mississippi river with the exception of Wisconsin. He has never been in any other business except the plaster trade, and has had some experience in all of its branches. Speaking of the early days Mr. Smith said: "When we first started at Decatur the use of patent wall plaster, as they then called it, was in its infancy, and we had to educate the people to its use. It was like selling gold dollars for a dollar and ten cents then, but now it is a staple commodity and sells as such."

## Transportation of Material With Wire Rope.

The utility of wire-rope cableways for the transportation of materials is becoming widely recognized, though in Europe greater progress has been made than is the case in this country, since abroad there are a number of installations at work as common carriers for the transportation of goods. In Holland, for instance, there is a wire-rope tramway for carrying the crops. This line is about a mile in length, and has a carrying capacity of fifty tons daily, the produce being conveyed in baskets containing about 100 pounds each. A six-horsepower portable engine supplies the power. The line is so constructed that it can be taken down and put up again in a fresh place in one day, by the aid of twenty men, provided the new location is within a radius of five miles.

At Madras, India, there is a wire ropeway for the carriage of concrete material, which has a total length of three miles, and the capacity is between 100 and 150 tons of material per working day.

At a Brazilian cement works there is a wire-rope tramway nearly two miles in length, capable of transporting some 100 tons of cement in bags per working day of ten hours.

An aerial or wire-rope tramway can be constructed and worked on hilly ground at a cost not greatly exceeding that which would be called for on a level country. Rivers and ravines can be spanned without the aid of bridges. Gradients quite impracticable to ordinary railroads can be worked with ease. The lines do not occupy any material quantity of ground, a post or standard at wide intervals being sufficient to carry them. The occurrence of floods or heavy snows does not interfere with their working, and the line can be moved with comparatively small expense. The cost of a line is usually in accordance with its working capacity.

## Japanese Laborers Get In.

WASHINGTON, July 14.—The Administration believes that the Japanese Government is in good faith trying to live up to its agreement to issue no passports to Japanese laborers to come to the United States. It was found, however, by agents of the United States Government that some of the Japanese of the exempt classes who came to this country eventually turned up in menial occupations, and there ensued a correspondence between the two governments as to what really constituted a laborer.

Japan, it is understood, has accepted the definition of laborer submitted by the State Department, but in the meantime there seems to be no way to deport those pseudo merchants, students and others who got into this country on passports and subsequently went to work as laborers. All immigrants will be under surveillance by Government agents in order that it may be known what becomes of them after they reach this country.

The Southern Lime and Cement Company, of Charleston, S. C., has acquired the property and plants of the former American Lime Company, located at Spring City, Tenn., where they will continue the lime and crushed stone business. The subsidiary company will be known as the Southern White Lime Company, in charge of James J. Lynch.

## FROM OUR OWN CORRESPONDENTS

### NEW YORK.

The Fireproofing Department of the United States Gypsum Company, 1123 Broadway, New York, which is under the management of Mr. G. L. Williams, have just been awarded the large contracts for fireproofing with United States Gypsum Hollow Tile, the Boston and the Newhouse Buildings, now in course of erection at Salt Lake City, Utah. These are two of the largest contracts of the year for this class of work and the United States Gypsum Company and their representative, Mr. Williams, are to be congratulated.

The American-European Labor Exchange, whose offices are at 119 St. Mark's Place, and who furnish laborers of all nationalities for all kinds of quarry, construction or concrete work, report that their business, which has necessarily suffered through the ill effect of the recent hard times, now shows a revival which indicates great improvement in the trades and industries requiring large numbers of laborers. They point to the fact that they have furnished a great many laborers to various cement companies during the past few months, and that activity in all lines promises to continue. The firm employs the services of expert labor men in selecting laborers well qualified for various trades and industries and ships them to any destination on short notice.

In a talk with Mr. M. S. Ezell, of the Traylor Engineering Company, who are manufacturers of equipments for cement, rock crushing plants, etc., and whose offices are at 2 Rector Street, it was learned that this large company had experienced considerable improvement in trade conditions recently. Much of their business depends upon ventures which require large capitalization, and on account of the former stringency of the money market their business suffered from necessitated postponement of such large enterprises. The fact that there has been great improvement manifested lately in the business of this concern furnishes the best argument for the optimist. At the present time many very large contracts, which have been held in abeyance for the past many months on account of general conditions in business, are being closed and the Traylor company finds its trade making rapid advances toward its former position. Mr. Ezell stated it as his personal experience that five months ago it seemed almost impossible to interest anyone in new and large installations of any kind. "Three months ago," he said, "there began some signs of activity and today a great many contracts, which have been postponed from time to time, are being closed. It is my idea that business conditions generally are on the mend and that we are approaching an era of greatly increased prosperity."

Mr. Charles H. Pratt, secretary of John Turl's Sons, Inc., whose offices are at 26 Cortlandt Street, informed the ROCK PRODUCTS representative of material improvement in trade conditions as experienced by his company. This firm operates large works at Newburgh, N. Y., where they manufacture cars, concrete mixers and other lines of concrete machinery. Mr. Pratt said: "We have noted considerable increase in business lately and it is my opinion that conditions will continue to improve. We certainly have very promising indications of a good revival in trade."

The Edison Portland Cement Company, whose sales offices are at 1133 Broadway, New York, report improved conditions in the cement trade. According to the statement given to the ROCK PRODUCTS representative, there is every indication to look forward to a very satisfactory year's business.

To the exhibits of the Concrete Association of America on the eleventh floor of the Brunswick Building, at Twenty-fifth Street and Fifth Avenue, has been added the handsome display of the Atlas Portland Cement Company. The display, which will be complete in every detail, it is estimated, will entail an expense of \$2,500 to \$3,000.

The Hoosac Valley Lime and Marble Company, whose offices are at 1123 Broadway, report a slight decrease in the demand for lime at the present time. This is considered a looked-for occurrence at this time, as it is by no means taken as an indication of any permanent decrease in business. On the contrary, the firm looks forward to a very satisfactory year. Their plant is at Adams, Mass., but their main office in New York is in charge of Mr. Thomas D. Connors, who is the president of the company.

When the ROCK PRODUCTS representative called at the office of the Bath Portland Cement Company, at 1123 Broadway, he found Mr. B. F. Stradley, Second Vice President of the company, in a very optimistic mood concerning the outlook for the cement trade. Since March he has noted a steady improvement in the cement trade, which seems to be general with all cement-producing concerns and in proper proportion to their several capacities. "March showed an increase over the month of February," said Mr. Stradley, "and each succeeding month proved still better until the present time, when, it seems, that the total sales will fall below those of the preceding month. However, this is naturally to be expected, since July is usually counted a dull period in trade." In answer to a question regarding the outlook for the future, Mr. Stradley said: "To my mind the country is steadily regaining its former position in trade and I am sincere when I say that I believe there will be a continued improvement from this time forth in all lines of business."

Mr. W. W. Bale, Sales Manager of the Pennsylvania Portland Cement Company, 26 Cortlandt Street, is one of the most optimistic cement men in New York. Although interviewed at a time when he was very busy, Mr. Bale took occasion to say that there had been more or less improvement in trade conditions with his company since the beginning of Spring, but that the past few weeks have brought about the most prominent change for the better. Better still, Mr. Bale believes that these few weeks of increased business signify the coming of a very satisfactory Fall demand. To quote him, he said: "The increased number of orders and inquiries which we have been receiving, especially during the past few weeks, denote to me that we are going to experience a good Fall business. I do not believe that the demand will equal that of the past Fall season, yet there is every reason for me to believe the trade will be very satisfactory and that from this time forth the improvement will continue."

Mr. A. R. Blackie, Manager of the Hadsell Lime Company, who operate a plant at Clayton, Mass., was a welcome visitor to the New York office of ROCK PRODUCTS on June 30. Mr. Blackie did not happen to have the June 22 issue with him at the time of his visit to this city, and so his requirements were supplied from this office. He stated that the plant of his company was not in full operation at that time, but that they expected to be running to full capacity soon. Doubtless by this time his expectations have been realized.

About 175 prominent engineers, architects and contractors of New York visited the plant of the Edison Portland Cement Company on Saturday, July 18. It will be remembered that a recent edition of ROCK PRODUCTS contained the account of the visit of the Brooklyn Engineers' Club, at which time a representative of this paper accompanied the party. It is understood that the latest excursion was of much the same nature, the party leaving Hoboken at 11:45 A. M. and returning from the plant to New York at 7 P. M. As in the former instance lunch was served en route and the best facilities provided for a thorough inspection of the Edison plant. Mr. Thomas A. Edison accompanied the New York delegation along with other officers of the cement company, among which was Mr. E. Meyer, Sales Manager, whose office is at 1133 Broadway, New York.

### PHILADELPHIA.

PHILADELPHIA, July 19.—In cement quarters there is obviously a considerable improvement all along the line. Values, however, though fairly steady in this immediate territory, have been somewhat off in outside districts. Reports coming in show that in the Lehigh Valley cement field more cement was shipped in June than was manufactured, and as there is practically no concern which has stored cement to last over sixty days, it is likely that the first spell of activity will catch some of the buyers napping, as an increase in prices will then inevitably follow. The lime manufacturers report a sudden rush of business during the last few weeks, and they are very hopeful regarding the outlook. Sand and other building supply dealers are much more cheerful and are convinced that the large amount of work now on the boards awaiting capital will soon be pushed. Fire-brick makers state that things are brightening a little, and they are anticipating an early revival.

The Association of American Portland Cement Manufacturers will hold its next meeting at Detroit on September 7 and 8. Great interest is taken by the large cement concerns in the distribution of a small educational paper gotten out by this association and known as the "Concrete Review," which is sent gratis from the office of the association after a sticker has been placed on them bearing the compliments of the sender. The genial secretary, Percy H.

Wilson, is always more than ready to coöperate in any complimentary movement of this kind toward the members of the association.

Although at the last meeting of the Engineers' Club the rooms were officially closed until September 19, there can notwithstanding be found daily small frequenting groups of members and friends discussing the various topics of the day or battling with some urgent technical point of engineering interest. The rooms, large and airy, afford an inviting retreat from the sunbeaten thoroughfares.

The great game of baseball which is played annually between nines of the Builders' and Lumbermen's Exchanges for the benefit of the Modified Milk Society, the Red Band Sanitarium and the Children's Country Week, came off promptly on schedule time. This annual affair is always an event looked forward to with a great deal of interest by members of both organizations. The builders, as has habitually been the case, were winners also in this last game, by a score of 14 to 3. The proceeds of the game, to the gratification of both sides, were considerable for the beneficiaries. Benjamin F. Nusbaum of the Builders' Exchange and George A. Howes of the Lumbermen's Exchange deserve great credit for their successful management of the contest.

The William G. Hartranft Cement Company, 1114 Real Estate Trust Building, report that they shipped more cement in June than in the same month of last year, and they regard the outlook promising.

The Bath Portland Cement Company (F. M. Hoover, Philadelphia representative), 1502 Real Estate Trust Building, report business brightening up somewhat. Their July sales so far are ahead of previous months. Their plants are running about three-fourths capacity, and the outlook is considered as fair. They recently brought off a notable blast at their quarry at Bath, Pa. For a month preparations were made for its accomplishment; forty holes were prepared, averaging 100 feet in depth, 25 feet apart and 25 feet back of the brink of the quarry. Highly skilled labor in the way of quarry drillers was employed; electricians and dynamiters were in demand. Mrs. Franks, wife of Frederick Franks, the general manager, pressed the button which sent out the electric spark, and the result was truly an upheaval of nature. It is said that over 100,000 tons of cement rock and limestone were loosened by the blast.

The Lawrence Cement Company of Pennsylvania, 616 Harrison Building (L. V. Clark, representative), report that though business is showing no decided improvement as yet, it holds steady, and there seems to be a little better feeling as to outlook. Prices in some sections are still off.

The Charles Warner Company, 810 Land Title Building, are encouraged over recent increase of trading all along the line.

The National Fireproofing Company, 317 Land Title Building (E. E. Nickson, manager), state that though there is nothing especially large on the boards, small work is plentiful. The outlook, they think, is much brighter.

The Cedar Hollow Lime Company of Cedar Hollow, Pa., report a decided improvement of late in orders, and they are cheerful over the outlook.

The Whiteland Lime Company of Devault, Pa., is again actively engaged in manufacturing. They report business much more satisfactory.

The McCoy Lime Company, Bridgeport, Pa., state that they have been getting some good business during the last few weeks and that the outlook for the fall is very good.

The Keystone Lime Company of Plymouth Meeting, Pa., are much pleased over recent improvement. The plant is being pushed to nearly full capacity.

The De Train Sand Company, Otis Street wharf, this city, report general business quiet, but in carload shipments business has held up fairly well. They look for good fall trade.

The Construction and Engineering Company, Limited, of New York City was chartered under Delaware State laws on June 16, capitalized at \$100,000.

The Continental Artificial Stone Manufacturing Company, Lexington, Ky., obtained a charter under Delaware State laws on June 18; capitalization, \$50,000.

The Nanticoke Brick Company, Nanticoke, Pa., was granted a charter under Pennsylvania State laws on June 26; authorized capital, \$22,000.

The Lehigh Construction Company, Philadelphia, was incorporated under Pennsylvania State laws on June 26; capital, \$20,000.

The Simplex Engineering Company, Philadelphia, received a charter under Pennsylvania State laws on July 2; capitalized at \$10,000.

A. S. Reavis, president, and Charles B. Meller, a foreman, of the Reavis Construction Company, who were tried for manslaughter as the result of a loss of life in the collapse of the reinforced building they were erecting at Fifteenth Street and Washington Avenue, were acquitted on June 23.



LOUISVILLE.

LOUISVILLE, Ky., July 19.—Since the beginning of the present month there has been an awakening in the industrial market, and the prospects are now more favorable than they have been in several months. This applies to many lines of activity, and the concrete and allied lines of building work are looking more favorable. There have been more prospective orders on hand in the past few weeks than has been the case in as many months, and contractors are all feeling that the early fall will make a good showing in a business way.

Cement is moving out more favorably, and there is a much better tone to the market in every way. The price of Portland cement is still somewhat off, but there is a better demand and an advance is expected.

A contract has just been awarded to Gustav Lorch for the construction of the new grandstand at the Kentucky State Fair in this city. The structure is to be of concrete and iron, and is to cost \$15,600.

The Central Concrete Construction Company say that the indications point to a better and more active season, and they feel that there is in prospect a brighter time for all.

The Holmboe Company have just been awarded the contract for the erection of a cement tank at the new plant of J. B. Speed & Co., near Sellersburg, Ind. It will be 45 feet high and 45 feet in diameter, with a foundation of 12 feet, all reinforced with Johnson bars, from one inch down to one-half inch. It will be used for a mixing tank; that is, for the proper mixing of the Portland cement as it comes from the mill. The Holmboe Company were the designers and contractors and the cost will be \$7,500.

The Hospital Commission in this city has just recommended to the Mayor and Board of Safety the erection of a new city hospital, to be constructed entirely of concrete. It will cost between \$700,000 and \$800,000. In recommending the use of concrete the commission state that they desire an absolutely fireproof and germproof building, and that concrete is the only building material that could be recommended for this purpose.

J. B. Speed & Co. have just put on about 100 additional men at their plant at Speeds, Ind. This was made necessary by the great increase in the number of orders. They have lately incorporated with a capital stock of \$35,000.

J. E. Condra & Co. of New Albany, Ind., are manufacturing a cast stone that is beginning to prove popular here and in their own city. It is composed of crushed limestone and Portland cement. It also embodies a secret waterproofing process, and the effect of the finished product is most attractive. It can be molded in any size blocks, in the wet form, and is allowed to set for ten days, when it is cut just the same as limestone. It is most attractive in appearance and is said to cost about one-third less than natural stone.

The Crumbo Stone and Concrete Company, also of New Albany, find conditions very fair in the concrete industry and are satisfied with the indications for the coming months.

John J. Culley says that he has been busy all summer with block work, and that he now has several contracts that will give him enough to do for some time. He is contemplating the erection of a new and commodious plant.

The National Concrete Construction Company have been doing more figuring in the past week or so than they have done in some months, and they are of the opinion that there will be a very fair volume of business in the next few months in the concrete line.

The Southern Roofing and Paving Company are well pleased with conditions as they see them now. They are still working several crews of men in the State. In roofing lines they are keeping reasonably active, with good prospects.

The National Roofing and Supply Company are not as much rushed as they could wish to be, but they have a fair amount of work on hand in concrete and roofing lines.

Samuel F. Troxell & Co. say that there is only a fair amount of roofing work on hand at the present time, but they note much better indications for the coming months.

The Kentucky Wall Plaster Company feel that they will be busy during the next few months and say that at this time they have about all the orders they can take care of.

The Atlas Wall Plaster Company are installing a 50-horsepower motor. They are operating their plant overtime now.

The New Albany Wall Plaster Company say that there has been a nice demand for their plaster, and that they have been busy, with prospects very favorable for the coming months.

The Kosmos Portland Cement Company find the call for cement to be brisk. They are operating their large plant on full time, and have about all the orders they can well supply now. They are well pleased with the indications for the fall, and only complain about the low price of cement. Mr. Horner has just returned from a trip to the East.

J. Augustine Smith, representing the Ideal Concrete Machinery Company, South Bend, Ind., was a visitor here a few days ago. He reports the trade outlook in the South very favorable for concrete operations.

The Louisville Cement Company say that there is enough demand for cement to make things look hopeful, and the indications are even more cheering for the coming season.

The Ohio River Sand Company find an increasing demand for sand and gravel now, and feel more encouraged than they have in several months.

The Louisville Fire Brick Works note an increase in the demand in the past few weeks, and they are now operating their plant on full time.

The Kentucky Vitriified Brick Company find a nice call for their output. They feel that there will be a better fall demand.

The Burrell & Walker Clay Manufacturing Company are not as active as they could wish to be, but are doing some business. Conditions with them have not yet become normal, however.

The P. Bannon Sewer Pipe Company are about as much rushed as they could hope to be, and that is saying something in their favor. There is a nice demand for sewer pipe with them.

The Kentucky Fire Brick Company, Haldeman, Ky., are increasing their output all the time, and they are getting things in shape to enlarge their plant, so that they will be able to meet the increasing demand for their commodities.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., July 16.—Trade in Memphis is very good for midsummer. Prices are holding up well. A number of the building supply and concrete firms were interviewed by the ROCK PRODUCTS correspondent, and a general feeling of optimism and satisfaction is prevalent.

The Ornamental Cement and Block Company of this city are building several concrete block cottages for J. Lindsay Wells in a residential subdivision in East Memphis in which the latter gentleman is interested.

The Memphis Granolith Company, 1087 Rayner Avenue, are doing some work over the city along concrete lines and are having a good season.

The Wright Lime and Cement Company, on South Fourth Street, report that the trade in cement as well as the prices are picking up. They are also doing a good business in sewer pipe. Steve Wright, the manager, has returned from a recent trip through Mississippi. He found good crops and satisfactory business conditions in the sections visited.

J. C. Lovelace of the sales department of J. A. Denie & Co. was seen at their place of business on South Front Street. He said: "Business, while it is a little less active than it was last year, has kept up wonderfully well. Prices are about stationary on cements, but since the first of June our business has taken on the nicest kind of improvement. We are handling the Atlas, Red Ring and Lehigh goods. Our line comes from the Dennie kilns, and we also get some lime from Erin, Tenn. We have captured recently several splendid local contracts, among them furnishing the plastering material on the million-dollar Courthouse of Shelby County. We are furnishing a quantity of Louisville cement and lime on some of these jobs. We are furnishing the cement and plaster for the six-story department store of the Bry-Block Company, Memphis, and the cement and lime on the First National Bank Building. We have just finished the cement floors in the large building of the Memphis Cold Storage Company on South Front Street.

The Kavanaugh Sand Company, Tennessee Trust Building, state that the trade in sand at this time is rather quiet, but the firm has been filling some large local contracts. They furnished the gravel on the million-dollar Shelby County Courthouse, for the Y. M. C. A. Building and for the Bry-Block department store.

Mr. Fraser of the Cubbins Lime and Cement Company said: "Business is very good in Memphis this summer. We have had the pleasure to furnish some of the material on the Courthouse job. We have added to our warehouse system over the city and have a very convenient system now for our patrons. We are handling a good deal of Avery U. S. gypsum plaster. The Grand old Sunflower cement which we are selling is meeting with good sales too. Some of our people have lately started up a brickmaking business also."

NEW ORLEANS.

NEW ORLEANS, La., July 17.—The summer dullness seems to have settled down over the building operations of the city, but the architects are all busy with some big plans or plans for some big buildings that would make it seem as though there will be something doing in the near future.

It looks as though concrete had taken possession of Chalmette, a suburb of New Orleans and the site of the Terminal Company's wharves and docks, which are all of concrete, and of the American Sugar Refinery's plant, which is largely of concrete, besides concrete elevators and other things that go to make up one of the finest railway terminals in the United States.

The Brooklyn Cooperage Company is putting up a plant adjacent to the sugar refinery's plant that will have a great deal of concrete about its buildings. James Stuart & Co. are the contractors and E. Krause the architect. The main building is 385x150 feet, one story, and has eight kilns, each 35 feet long, for the kiln-drying of barrel staves and heading. A gravel concrete foundation, proportions 1:3:5, will overlay the piling and form the side walls. In this building and in the storage building there will be approximately 3,000 cubic yards of concrete.

This city has lately been visited with an epidemic of fires, and in each instance modern fireproof buildings are to be erected. This portends great quantities of concrete. Little by little the architects are accepting concrete as the chief structural material in fireproof buildings. One of the members of the architectural firm of Stone Brothers said the other day: "Concrete construction is all right for floors and fireproofing, and for foundations it is the best thing that can be provided for the purpose. Stone Bros. have under construction the courthouse and city hall at Bristol, Va., which are to have concrete foundations and reinforced concrete floors. The estimated cost is \$60,000.

The concrete block factories of the city are all busy, but are not rushed past their capacity.

The Pettijohn system of block manufacture is possibly the oldest, and the hydraulic system is among the candidates for popular favor, but the largest contracts have been given to F. Bowers, the manufacturer of the Ferguson two-piece system of hollow concrete blocks. One of the handsomest churches in the city is being erected of Ferguson blocks. Francis J. MacDonald is the architect. The same architect also furnished the plans for a three-story office and store building in which the Ferguson block will be used.

There is much paving going on at present, and the streets are torn up all over the town. There are different kinds of paving, but the bitulithic is possibly the most interesting. Especially is this so when the crushed stone is rolled with a roller in which a white-hot fire is blazing, a heavy coating of hot bituminous cement being spread and rolled again with the hot roller. Over this is spread a coating of stone chips, and it is then again rolled with the hot roller. Following this comes a gang of negroes with long-handled iron tamping mauls that have been heated in a near-by furnace. With rhythm and song they tamp the pavement, after which it is rolled again with the big hot roller. All this is going on while the laborers are sweltering and dying of heat in New York and Chicago.

MacKenzie & Biggs have just completed the plans for a rice elevator of 50,000 bushels capacity for the Empire Rice Company, to be located on St. James and Tchopitoulas Streets. It is to be of reinforced concrete throughout, walls, roof and foundation.

The material men are fairly busy. The Carolina Portland Cement Company report the trade in nearly all kinds of building materials a little off. However, lime is picking up. Many of the buildings are about ready for the finishing, into which in most instances a good portion of lime enters.

A representative of F. Codman Ford says that cement sales are picking up a little, there being a great deal of general construction work, such as fireproofing, brick work and foundations, which calls for cement.

The Hollow Concrete Block Company are moving along at a good pace furnishing blocks for contractors who are building concrete block houses. This company grows more enthusiastic all the time in its work.

The Hydraulic Structural Stone Company have shut down for the summer.

The American Manufacturing Stone Company are busy and are turning out some beautiful and artistic work both in residences and church buildings.

The Audubon Hotel, about which there has been much secrecy, and work on which was suspended for several weeks, is again under headway. The General Supply and Construction Company have the contract.



## CLEVELAND AND NORTHERN OHIO.

CLEVELAND, O., July 18.—Substantial improvement has been noted in building conditions during the past month. Several projects of size and importance have been launched and are now well under way. The banks are loosening up on their money gradually but surely, and it is expected that August and September will show up well with the same months of last year.

The cement market this month is showing more activity than for months. The cutting of prices has subsided, for there is now a little business to go around and a wild scramble is not made for every contract which appears. Portlands are selling around the \$1.50 mark for most jobs. Owing to its exclusion by the city building code there is little market in Cleveland for slag cement.

One of the biggest contracts ever let for a cement structure in Cleveland will be made early in August, when bids will be opened in connection with the erection of the mammoth concrete bridge to be erected across Rocky River and to contain the longest single arch in the world. Its estimated cost reached nearly \$250,000. It is hoped that the contractor will get to work at once and set his piers this fall ready for the big spans next spring.

One of the most interesting announcements of the month has been made by M. A. Bradley, the millionaire Cleveland, who has an abiding faith in concrete buildings and who has erected two or three a year for the past three years. Mr. Bradley is preparing to erect a six-story concrete building with a frontage on Prospect Avenue of 82 feet and on East Second Street of 114 feet. Reinforced concrete is to be used throughout. The building will be used as an office and power block. The plans for the structure are being prepared by Architect M. E. Wells. Bids will be called for early next month. It is hoped to get the structure well under way before the cold weather sets in.

The contract for the erection of the new workhouse building at Warrensville, just outside of Cleveland, has been let to the C. H. Fath & Son Construction Company. The building will cost \$115,000, which will mean a saving to the city of \$40,000 compared to figures received last year. Hollow brick covered with plaster will be used for the walls, while the interior construction will be of reinforced concrete. The excavation has been made by the workhouse prisoners, and the spot is ready for the contractor to proceed at once.

One of the biggest contracts let during the month was for the erection of the mammoth new store on Euclid Avenue adjoining the Union Club for the Sterling-Welch Company. It is to have a frontage of 60 feet and a depth of nearly 600 feet, going up five stories. The building complete will cost nearly \$250,000. The general contract was let to the Hunkin Bros. Construction Company. Work has already been begun by that concern on the foundation work. The contract for the terra cotta of which the front of the building is to be composed has been let to the Northwestern Terra Cotta Company for about \$8,000. The Cleveland Builders' Supply Company will furnish the 1,500,000 shale building brick necessary for the walls. The interior construction will be of concrete and steel. It is expected that the building will be ready for occupancy early next spring.

Directly opposite the Sterling-Welch site there is being erected the ten-story office building for A. A. Pope. Three sub-basements have been constructed. A 40-foot cofferdam was built, and about this a massive wall of concrete has been set, excluding the dangerous quicksands which abound at that point. The contract for the superstructure will be let shortly. The building will be faced with glazed brick, it is understood. Its cost has been estimated at \$1,000,000.

Not a hundred yards eastward and on the same side of the avenue rapid progress is being made on the erection of the six-story all-concrete flatiron building. The Carey Construction Company has already built a concrete wall about the excavation, which includes adjoining sidewalk space. This basement is to be elaborately fitted up as a rathskeller and restaurant. The concrete footings for the main pillars have already been set, and work on the pillars themselves is under way. The building is to be the first absolutely all-concrete structure in the city. There are a score of big buildings which are almost exclusively of concrete but which have a finishing touch somewhere about them of brick or stone. Even the floors in the new flatiron block will be of composition, while the exterior will be of concrete finish.

The Carey Company have also been awarded the contract for the concrete work in the new County Courthouse. The main feature of this contract is the reinforced concrete work for the heavy steps leading to the main entrance. There is also much interior concrete work. Work is progressing rapidly. About

one car a day of cement is being used. Lehigh and Atlas are the brands now being used.

The Reaugh Construction Company have been awarded the contract for the building of the new twenty-room Mayflower School on Orange Avenue. The work is now well under way. The brick used in the structure is being furnished by the Masons' Supply Company. All the interior basement walls are also being finished in brick, this idea having been adopted in the last five or six schools built by this city. Another \$80,000 building is to be built on Columbia Avenue, and contracts will be let within the coming month.

Work on the West Side Branch Library is being pushed vigorously by the contractors, D. C. Griesse & Walker. The contract for the terra cotta to be used in the structure, to the value of about \$5,000, has been let to the Atlantic Terra Cotta Company, although that concern has no agent in Cleveland. The Cleveland Builders' Supply Company will furnish the 50,000 shale bricks necessary for facing the walls. The foundations are largely of concrete and are about set.

Frank C. Cain is erecting a handsome new residence on Abington Road. The general contract for the mason work has been let to the Cuyahoga Concrete Stone Company of Cleveland.

Concrete for stopping bullets is being tried on the Cleveland rifle ranges. Butts of concrete have been built and fitted with self-recording targets. A summer camp has been established on the new range, and it has been pronounced a decided success and much superior to the old earth mounds and board targets.

The Lake Erie Lumber Company had a disastrous fire several weeks ago and had several of its buildings destroyed by fire. Instead of being rebuilt of lumber these buildings are having their main walls constructed of concrete blocks. A large lumber-shed, 130x64 feet and two stories high, and a stable, 24x50 feet and two stories high, are the main buildings being erected.

A novel sewer is being planned by one of the assistant city engineers of Cleveland. It is to be reinforced with steel and to be in the shape of an inverted horseshoe. Its inventor claims that it can be built for \$1 a foot less than the present kind. The shape has been chosen for mechanical reasons.

## BUFFALO.

BUFFALO, N. Y., July 18.—The Buffalo Burial Vault Company has been incorporated with a capital stock of \$25,000. Cement will be largely used by this concern. The directors are W. J. Connors, Mary A. Connors and Margaret L. Jordan.

The Akron (N. Y.) Gypsum Company has elected the following officers for the ensuing year: President, George J. Ralph; vice-president, I. D. Eckerson; secretary, F. M. Stage.

Commissioner of Public Works Ward of Buffalo has received low bids for the fiscal year 1908-1909 from the following bidders: Paving stone, dressed stone, dressed block stone, curbing and crosswalk stone, Martin Scanlon; sand and gravel, Thomas Brown Contracting Company; broken stone, Joseph L. Stabell Company.

The German Rock Asphalt and Cement Company was the lowest bidder for repairing the asphalt pavements of Buffalo.

Several contractors, including E. H. Rogers, a Tonawanda, N. Y., contractor, are planning, it is said, to build an eight-mile trolley line from O'Neil Street, Buffalo, to Tonawanda, N. Y.

It is said that the Lockport, N. Y., line of the International Traction Company is using a concrete railroad tie which was invented by Harry J. Corell of Mt. Jewett, Pa.

A. T. Throop has been making drills of the Niagara River channel along the line of the proposed waterworks system at Niagara Falls for guidance in case a tunnel is driven from the Canadian channel to the mainland.

Part of the Erie tracks in Elmira, N. Y., will be regraded and ballasted with crushed stone to replace the cinders and ashes with which the track is now ballasted.

Minister of Railways and Canals Graham of Canada has announced that prominent engineers are of the opinion that instead of deepening the present Welland Canal of Canada a second canal should be dug by the Canadian Government.

It is estimated that about \$200,000 will be spent soon by the Lackawanna Railroad in improvements in the Elmira, N. Y., yards of that company.

The Delaware, Lackawanna & Western Railroad Company has decided to spend nearly \$8,000,000 for improvements, which will include a cut-off line from Lake Hopateong, N. J., to Slateford, Pa.

H. B. Hooker & Sons have received a contract for resurfacing Meigs Street in Rochester, N. Y., with

trap-rock. The Rochester Vulcanite Company will build an asphalt driveway in connection with a public school playground in that city.

The supervising architect of the Treasury Department, Washington, D. C., has received proposals of sites for postoffice buildings in the following New York State cities: Salamanca, Olean, Penn Yan, Waterloo and Hornell.

The Buffalo Grade Crossings Commission has opened bids for work on the substructure, approaches and subways for two groups of grade crossing improvements to be made in this city. For group one, comprising the Elk Street improvements, the bids were as follows: Eastern Concrete Company, \$58,422.58; John Johnson, \$60,027.51; Eyre-Shoemaker Company, \$68,336.25; Joseph F. Stabell Company, \$72,515.45; E. W. Huntington, \$72,673.

Bids on group two, comprising the Belt Line improvements between Broadway and Delavan Avenue, were as follows: Eastern Concrete Steel Company, \$141,195.46; Joseph F. Stabell Company, \$145,031.70; Henry Burgard, \$151,162.08; John Johnson, \$158,736.97; E. W. Huntington, \$163,292.81; Eyre-Shoemaker Company, \$164,193.96.

All the bidders are Buffalo concerns with the exception of the Eyre-Shoemaker Company of Philadelphia.

## THE WEST COAST.

SAN FRANCISCO, CAL., July 16.—The building situation is better than could be expected when the scarcity of money is considered. The building inspector's report for June shows that 638 permits were issued, with a total valuation of \$2,351,211. The figures vary but little from those of the past two months.

Quite a number of reinforced concrete and concrete steel buildings are under construction and several are close to completion.

The building statistics of the principal Coast cities outside of San Francisco for the month of June are as follows: Oakland, Cal., 233 building permits, valuation \$438,467; Los Angeles, Cal., 626 permits, valuation \$727,956; Portland, Ore., 380 permits, valuation \$833,390; Seattle, Wash., 1,088 permits, valuation \$1,280,033.

There is little change in the cement situation, and prices are about stationary. Consumption has not increased and can hardly be expected to do so in the near future. Stocks of imported Portland cement are equal to the demand. Very little foreign cement has arrived at this port during the past month, but several cargoes have reached northern ports. During the past six months the receipts have been so small that the stocks of foreign cement on hand have been reduced from 300,000 barrels to probably 75,000 barrels at the present time. A normal demand is expected this fall. Prices have been low, ranging from \$3 for Alsen's down to \$2.25.

The total output of the cement mills in California has been increasing, but prices are low. About \$1.85 f. o. b. factory, or from \$2 to \$2.50 per barrel f. o. b. San Francisco, is quoted. Twenty cents is paid for the return of the sacks, as all of the California cement is shipped in sacks.

The Standard Portland Cement Company's fine plant at Napa Junction, Cal., is running full-handed again.

The force of employees at the large cement plant of the Santa Cruz Portland Cement Company atavenport, near Santa Cruz, Cal., has been increased, and there is now a large output. This cement mill is owned by the same interests as the one mentioned above.

The Pacific Portland Cement Company's plant at Cement, Solano County, is in steady operation. Wakefield Baker, who has been president of this company since it reorganization, has been operated on for appendicitis, but is rapidly recovering.

While there has been a great falling off in the number of new projects that would require large quantities of cement, there is in the aggregate quite a consumption of that material on the Pacific Coast. A few large projects are taking a good deal of cement. Government and State work of various kinds will also require a lot of cement before very long.

A new San Francisco City and County Infirmary is to be erected at an estimated cost of \$250,000. A contract amounting to \$4,350 has been awarded to the O'Day Company for grading the site. The city architect has prepared a set of plans for the new building. It will have a reinforced concrete foundation. The location is on the Alhousie Tract.

The Mechanics' Institute of San Francisco has selected Albert Pissis as the architect for its new \$400,000 building, which is to be erected on Post Street.

The San Francisco Concrete Construction Company has been incorporated with a capital stock of \$500,

000 by P. H. Bosworth, Charles Coryell, A. O. Johnson, U. A. McConnell and Harry Shaw.

Advices from San Bernardino, Cal., say that the Golden State Cement Company is preparing to install a big cement plant at Oro Grande, on the desert, which will turn out 1,000 barrels of cement per day. The Allis-Chalmers Company have taken a contract to furnish the complete equipment, including 1,000-horsepower electric plant.

W. M. Rose of Anaheim has secured the ground on which to erect a factory for manufacture of cement pipe and blocks at Artesia, Cal.

A large shipment of equipment has been made from Umatilla, Ore., consigned to the Government Reclamation Service at Orland, Cal., and which will be used in the construction of the headgates at the diversion dam site of the Government Orland irrigation project. The equipment consists of steam shovels, engines, cement mixers, etc. Actual construction work will start at the dam site ten miles west of there when this machinery arrives. The firm of Rowe & Wire of Davisville have signed a contract for boring two wells on the Government's 10-acre tract. The buildings to be used by the Government officials are in course of construction on this tract.

The reinforced concrete public library building in San Diego, Cal., on Orange Avenue between Sixth and Seventh Streets, money for which has been donated by John D. Spreckels, will soon be under construction.

The ordinance authorizing a special election to provide for a municipal bond issue of \$110,000 for the city of San Bernardino, Cal., calls for \$17,000 for bridges and concrete culverts, \$77,000 for improving streets and \$8,000 for the purchase of a city plant for street repair work.

The State Board of Capital Commissioners of the State of Nevada have taken bids for the construction of a concrete reservoir in a canyon six miles northwest of Carson City.

## ST. LOUIS.

ST. LOUIS, July 17.—Active operations in building continue to be principally confined to residences, apartment-houses and flats, together with several structures intended for business and manufactories. These are going up at a lively rate in various parts of the city.

Two warehouses, to cost about \$50,000, are projected for erection on Vandeventer Avenue.

The St. Louis Independent Packing Company will make improvements at their plant on Sarpy Avenue which will cost \$250,000. The principal feature is a new cold-storage plant, ten stories in height, of brick and concrete. A viaduct is also to be constructed across the railroad tracks.

The city of St. Louis requires that the Portland cement used on city work shall be inspected, and in order to secure the business of the city the cement must be put up in paper sacks, which are duly inspected and branded. It was found that jute sacks bearing the inspector's brand were sometimes refilled and escaped inspection for that reason; hence the requirement with respect to using paper sacks.

Mr. Hunkins of the Hunkins-Willis Lime and Cement Company states that the new plant at Ste. Genevieve, known as the Peerless White Lime Company, is running and turning out 650 to 700 bushels of lime daily. Two kilns have been completed, and a feature in connection with the same is their unusual height (80 feet). Coal is principally used in manufacturing the lime. The company are also fairly busy in turning out black lime at their plant at Mincke, Mo., where they are making 1,100 bushels per day. They are selling a great deal of damp-proofing compound for foundation walls and reinforcing.

Mr. Gartside of the Colorado Lime and Cement Company says that their West End kilns are very busy, the lime going principally to Colorado, Nebraska and Iowa. They are also having a good demand for white lime at Garden City, where they are turning out 500 bushels daily.

The Charles W. Goetz Lime and Cement Company report a large number of small jobs and not many big ones under way at present, so far as local business is concerned. In the aggregate there is a good demand for lime, and in cement the low price is stimulating its use very largely.

J. S. Roper, secretary of the Grafton Quarry Company, says that business on the Illinois side of the river has been for some time held up by high water, which hindered foundation work. The river has been falling and the outlook is now improved.

The Parker-Russell Mining and Manufacturing Company say that business in fire brick, gas retorts and fireproofing is picking up a little.

Frank Steeg, general sales agent of the Acme Plaster Company, was met at the office of the company and found to be busy and feeling cheerful.

James R. Dongar is in Colorado for a vacation. Among recent big jobs in the city where the Acme product is being used is the extension of the Bank of Commerce Building. The Third National Bank Building, recently completed, is another of the fine modern office buildings where Acme plaster was used.

The Mississippi Glass Company recently gave an exhibition before the Engineers' Club of St. Louis consisting of a fire test at their great \$3,000,000 plant. The purpose was to show the value of wire glass, their chief product, as a fire retardant. The test proved eminently satisfactory to the guests of the company.

The vice-president of the Algonite Stone Company, George S. Griffith, reports an improvement in the demand for their artificial stone. Among the new jobs in which their product is being used is the Tuscan Hall Building in St. Louis.

## THE PITTSBURG DISTRICT.

PITTSBURG, PA., July 17.—Much improvement was again noted in this district during the past month in cement and concrete circles, and some good awards of contracts for this class of work were handed down. While there is not a great amount of very large contract work on hand this summer, there is a steady volume of small and medium-sized work that is keeping most of the contractors busy.

There has been an increasing demand for cement from practically all of the cement companies maintaining local offices, and some good business has been booked during the past month.

Concrete bridge construction throughout Allegheny, Fayette, Westmoreland, Butler, Greene and Beaver Counties seems to have become very popular this year, and a large number of the new structures that are being built in connection with the new State roads that are under construction this year are of reinforced concrete. These bridges have gained rapidly in the past two or three years, and it must be said also that it is entirely on their merits. The first few that were built were tried as an experiment several years ago, and there has not been a single failure up to date. Another feature that has tended to make them very popular is the fact that there is practically no after repair expenditure required, as is always the case with steel and wooden structures. The old floors of the latter must be repaired at least once a year, while the concrete bridge with a reinforced concrete floor has no great repair expenditure attached. About a score are being built in this vicinity now.

George H. Filbert, Hamilton Avenue and Putnam Street, Pittsburgh, has been awarded a fine contract for cement sidewalk construction in the Mt. Lebanon district. The contract was awarded by William E. Harmon & Co. of this city and calls for the laying of about 80,000 square feet of cement walk. The contract totals about four and one-half miles in length and covers an entire new plan of lots.

The United Electric Company, Dennison, Ohio, is building a large reinforced concrete bridge at the foot of Grant Street, that city, over which the street car line will pass. The company is building the structure with its own force of workmen, who are in charge of James Willoughby of West Uhricksville, Ohio. The contract for the cement has been awarded to the Alpha Portland Cement Company.

At Zelienople, Pa., J. J. Kennedy, W. T. Wright and F. S. Goehring, doing business as Kennedy & Co., dealers in builders' supplies, lime, cement, plaster, etc., has been dissolved by mutual consent, W. T. Wright and F. S. Goehring retiring, while Mr. Kennedy will continue the business at the old location and under the old name. He also assumes all assets and liabilities of the former partnership.

The McKelvey-Hine Company, Columbia Bank Building, Pittsburgh, has the contract for the construction of a large reinforced concrete roundhouse at Hall's Crossing, near Universal, Pa., for the Union Railroad. The structure will be the largest of the kind that has ever been erected in the Pittsburgh district and will be used both by the Union Railroad and the Bessemer and Lake Erie Railroad. It will be completed and placed in service by the latter part of this fall.

The council at Cambridge Springs, Pa., have decided to erect a city hall building of cement block, and work will be started in the fall. A white silica sand will be brought from Illinois, and with the pure white Portland cement that will be used it is expected that the building will closely resemble one built of marble blocks. A waterproof filler will also be used in order to prevent staining from rains, etc.

A number of capitalists at DuBois, Pa., have about perfected plans for the erection of a plant in that city for the manufacture of cement blocks, ornaments for buildings, tombstones and markers for cemeteries, cement water troughs, posts, pillars and columns. The company will be known as the Du-

Bois Cement Block Company, and a plant two stories in height and 55x100 feet will be erected. It is expected to have it ready to place in operation by the latter part of this fall.

The DuBois Lime Company of DuBois, Pa., will be incorporated under the laws of this State on the 27th of this month by S. M. Wilson, L. E. Weber and Joseph Bensinger, all of DuBois, Pa. The new concern will engage in the quarrying of limestone and the manufacture of lime.

## THE TWIN CITIES.

MINNEAPOLIS, MINN., July 18.—The summer is settling down to an average one in building circles, and people are commencing to forget in a measure the troubles which followed the knowledge of a severe panic in the East. The improvement is noticeable in a moderate but general lessening of the backwardness on the part of investors. More buildings are being projected and larger ones, and conditions look better generally.

These conditions are the total result of general conditions. Labor conditions, had they been at all obstructive, might have done considerable toward deferring much of the larger work. Fortunately for the business, no such obstruction was attempted, not entirely due to any real consideration on the part of labor, but more to a recognition of the absolute lack of ability to conduct a winning fight—for labor sometimes has periods of sense as to the conditions.

The change of prices on steel and iron have not had much effect, although it all helps toward inducing owners and investors to build.

John W. Schmidt of the railroad contracting firm of Schmidt Bros. & Hill, Superior, Wis., died suddenly at Leavenworth, Wash., where he was overseeing a railroad contract for the Great Northern Railway. He was 51 years of age and leaves a widow and one daughter.

The Minneapolis Threshing Machine Company are manufacturing at their works in Hopkins, a suburb of Minneapolis, a surface heater which is designed to resurface old paving of granite block, brick or other material with an asphalt facing.

The Lyman estate will erect a five-story store and warehouse building at 26-30 North Fourth Street, corner of First Avenue North, on plans by William M. Kenyon, architect. It will be 52x110 feet, of reinforced concrete construction, with pressed brick, cut stone and terra cotta exterior. Cost, \$75,000.

## BUSY CONTRACTORS.

T. J. Douglas of Los Angeles, Cal., will build a two story, concrete block office and store building in El Centro, Cal.

Charles Taylor has the contract for erecting a large reinforced concrete factory and engine house for A. A. Bartheles, Toronto, Can.

Adrian Oom has been awarded the contract for a cement block school house for the Christian Reformed Church on Hastings Street, between Ionia and Clinton Streets, Grand Rapids, Mich. The building will be two stories in height and will cost \$3,000.

Barnett, Haynes & Barnett, architects, have prepared plans for a fireproof tenement building, of concrete and brick, for the Mullanphy Emigrant Relief Board, St. Louis, Mo. It will be 161.6x76 feet and three stories high. The floors and partitions will be of concrete.

H. C. Coon has the contract for a concrete block building for an armory for Estherville, Ia. It will cost \$10,000 and will be 60x90 feet.

Oliver Randolph Parry, architect, has prepared sketches for a cement block corner residence, to be erected at Glenside, Pa.

The creamery which was burned July 1 at Glynndon, Pa., will be rebuilt of concrete blocks and will be fireproof throughout.

Harrison Albright, architect, of Los Angeles, Cal., has prepared plans for an eight-story and basement building at San Diego, for Henry Timken. It will be a reinforced concrete structure, the total cost of which is estimated at \$225,000.

F. A. Noyes has secured the contract for erecting the Spreckles library building at Coronado Beach, Cal. It will be 45x46 feet and of reinforced concrete construction.

A corporation represented by E. D. Silent & Co. has plans in hand for a \$90,000 structure, to be erected on Olive Street, St. Louis, Mo. It will be seven stories high with basement 40x168 feet. Reinforced concrete will be used in the construction.

Ballinger & Perrot, architects and engineers, Philadelphia, Pa., have awarded the contract to Cramp & Co. for a 150,000-gallon reinforced concrete reservoir, also for a pump house in connection with same for the Ivins, Dietz & Metzgar Company, Marshall and Seventh Streets and Lehigh Avenue, Philadelphia, Pa.





## The National Lime Manufacturers' Association

Meets Semi-Annually.

W. E. Carson, Riverton, Va. .... President  
A. Newton, Chicago. .... First Vice-President  
F. M. Palmer, Jr., New York. .... Second Vice-President  
F. P. Hunkins, St. Louis. .... Third Vice-President  
C. W. S. Cobb, St. Louis. .... Treasurer

Official Organ, ROCK PRODUCTS.

### LAST CALL.

The National Lime Manufacturers' Association will hold its Great Summer meeting at Cleveland, Ohio, August 12 and 13, in the Hollenden Hotel. Everything and everybody engaged in making lime in this country will be on hand. The lime quarry operator who misses this convention can never hope to catch up with the procession again. The invitation is to all, both cordial and free.

### Get Back to the Standard Way.

Some two or three years ago those lime manufacturers who were already producing hydrated lime considered and generally approved of the adoption of the following standard, which was following the practice generally in use by cement manufacturers and considered satisfactory:

Bags to be billed with the material as a lump item and not separated on the billing.

Shipments in burlap to be quoted at a price \$1 higher than shipments in paper sacks.

Burlap sacks to be standard 100 pounds, and paper sacks standard 40 pounds.

Burlap sacks to be repurchased at 10 cents each when returned to the manufacturers freight prepaid and received in good condition.

Terms: Net amount of bill in thirty days from shipment, 1 per cent off for settlements in ten days from date of shipment.

In the race for business some manufacturers of hydrated lime have varied the conditions of sale, package charges, etc. Part of this may be due to lack of information, but part can undoubtedly be attributed to a desire to offer some better conditions of sale to purchasers, thus to be able to secure additional orders.

It would be a very decided benefit to both manufacturers and consumers in the long run if the standard conditions of sale could be followed out in the trade.

The matter of adopting and adhering to the standard methods of billing and shipment should be threshed out at the coming summer meeting at Cleveland by the hydrating division of the trade.

### Machinery Exhibits at the National Lime Convention.

For the first time in the history of the National Lime Manufacturers' Association, at the meeting which will be held at the Hollenden Hotel, Cleveland, August 12 and 13, there will be an exhibit feature. This is a unique departure and one that has already attracted considerable attention.

The room in which the exhibits will be made is 40x60x80, with an ell, and from the number of inquiries already received it would appear that the space will be well filled with exhibits interesting to every lime manufacturer. The exhibition room will be well lighted and is easily accessible to the Hollenden Hotel. Air, electric and steam power can be secured for those who wish to give practical demonstrations with their machinery and equipment.

At the present writing ten of the leading manufacturers have signified their intention of making exhibits. These include cars, tracks, pneumatic tools, drills, air compressors, conveying machinery and other equipment.

A small charge is made exhibitors for the privileges of the hall, the maximum cost for a space ten feet square being \$25. This may be reduced considerably, as it is not the intention of the association to make money out of the exhibition, but merely to defray the actual expenses.

In addition to the warehouse or main exhibit room the parlors adjoining the meeting room in the hotel are available for the purpose of exhibiting blue prints, samples of material and small model exhibits. A maximum charge of \$10 will be made, which will include a table for catalogues and other literature.

All shipments should be made to the Hollenden Hotel, in care of the Atlas Car and Manufacturing Company, Cleveland, Ohio.

From all points of the compass comes the information that the lime manufacturers will be out in full force. It promises to be the largest-attended meeting since the inception of the association, and every manufacturer of machinery or equipment pertinent to the manufacture and handling of lime should have an exhibit. Those who have not already signified their intention of being on hand should write E. H. Defebaugh, Secretary, 355 Dearborn Street, Chicago.



PRESIDENT WM. E. CARSON.  
"That Live Irishman from Virginia."

### An Open Letter.

HUNTINGTON, IND., July 20, 1908.

To all Manufacturers:

I am most emphatically convinced that it is necessary for the lime manufacturers who come in competition with each other to get together once more. The purpose is that the lime business in the different sections is becoming somewhat diseased, and a radical remedy is necessary in order to prevent an epidemic of this disease. Therefore, I take it upon myself, and take advantage of this opportunity to send a notice to all the manufacturers who are competitive to meet in the city of Cleveland, August 11, at the Hollenden Hotel, at 7:30 P. M. I think no one will lose any time, or will have to go to any extra expense in order to attend this meeting, as the National Lime Manufacturers' meeting is called for August 12 and 13, to be held in the same city. This is a golden opportunity for the manufacturers to get together to discuss their troubles with each other, and to apply all possible remedies in order to avoid similar troubles in the future. Also to consider the selling end of their business and adopt plans by which this part of the business can be improved, as it needs it, and needs it badly.

No manufacturer should be absent from this meeting as we all need an improvement in our business, especially at this time. If the manufacturers are united they can do what they cannot accomplish single-handed. In union there is strength, as is evidenced by the different organizations and unions in all kinds and classes of work, such as church work, government work and all other work. Where people become united they are fortified against attacks made by their enemies, and it gives them greater strength. This should be done, and is necessary in our business as well as in many others.

Kindly advise me if you will be present at this meeting at 7:30 P. M., in the city of Cleveland, Ohio, at the Hollenden Hotel, August 11, 1908.

PETER MARTIN,  
"The Modern Moses."

### From the National President.

RIVERTON, VA., July 18, 1908.

To the Lime Manufacturers of the United States—  
Greeting:

For the last four months I have been outlining through the editorial columns of ROCK PRODUCTS, and by personal letters directed to the individual manufacturers, the plans, intentions and expectations of the National Lime Manufacturers' Association, and feel sure that, by this time, every lime manufacturer in the United States has such a knowledge of the movement as will give him an intelligent and comprehensive grasp of what is being done.

This letter is written on but one subject: The semi-annual meeting to be held at the Hollenden Hotel, in Cleveland, August 12 and 13. Before taking it up, I wish to say, it is now fairly and squarely up to the lime manufacturers of the United States as to whether or not they wish to become members of the National Lime Manufacturers' Association, the intention of which is to put their business on such a footing as will make it secure against the inroads of such competitors as cement and hard wall plaster, and whether they are willing to cooperate with their neighbors to the end of getting at such understandings as will harmonize their business relations to increase their profits, and further, be in constant touch with the best thoughts and ideas for the development of their plants, and be informed of the economies that are being worked out, so that lime can be produced cheaply enough to retain its place as a building material.

Now, as to the semi-annual meeting. If you are a member of the National Lime Manufacturers' Association, I am sure you will attend this meeting, for you know the great benefits to be derived therefrom. If you are not a member, I herewith, by permission of the executive committee, extend you a most hearty and cordial invitation to come, "without money, and without price." Come! Look! Listen! And if you desire, participate in the proceedings. If you do not believe in the movement, come! And we promise that, like the man who went to the religious meeting to scoff and stayed to pray, you in like manner, will leave, a convert to the idea of "the greater lime business." If you are "almost persuaded," come! And be finally convinced, but whatever you do, COME!

The following is an outline of what will happen: At 10 a. m., on August 12, the meeting will be called to order. After the usual routine of opening the meeting, a report from the engineering committee will be had. After this report has been disposed of, new business will be discussed, and plans for the future decided upon. Then will come the reading of papers. That the quality of these papers will be as high as it is possible to get in an industrial association, is fully guaranteed by the personnel of the writers.

E. W. Lazell, Ph.D., will offer a paper on the subject, "Lime Burning, With Suggestions for Improvement and Economy." Dr. Lazell, I think I am not out of the way in saying it, is the foremost chemical engineering expert in the United States, if not the world, on all questions relating to the problems that arise in the manufacture of lime. He is one of the few professional men who have given this subject their undivided, diligent attention, from the theoretical, as well as the practical standpoint. This paper alone will be worth more than the entire cost of a trip to Cleveland.

Prof. H. J. Wheeler of the Kinston, R. I., experimental station, will deliver a paper on the "Agricultural Outlet for Lime." Prof. Wheeler, for a number of years, has been the United States government's right hand in its experiments along this line, and he has written and prepared a number of bulletins and pamphlets relating to it. He will not only present the matter from a theoretical, but also from a practical standpoint, and it is most fortunate that the National Association will have the benefit of his information. The use of lime in agriculture is one of the outlets that should be developed, and Prof. Wheeler has made a greater practical study of the uses of lime in agriculture than any other individual in the United States. I am also making an effort to have a paper presented on "Ground Limestone in Agriculture." In some sections of the United States it is held that this is a better application than lime, and I hope to have the two leading experimenters on these subjects, lime and limestone, at this meeting, so that the manufacturers can have an opportunity to hear the subject thoroughly threshed out.

The hydration problem will be handled by H. Bachtenkircher. This problem is probably the most necessary of solution in the lime business today, and Mr. Bachtenkircher has been making a particular and exhaustive study of hydrated lime. He is a chemist, and at the same time, is practically in con-



nection with this end of the business, and is considered one of the best informed and ablest authorities on the subject.

Many times when the subject of making prices has been discussed, I have heard manufacturers say that they did not know exactly what their lime cost them, or what each particular department was costing, this being due to the fact that the output in kilns will vary, that the question of dirt in quarries is always problematical, and that there was really no definitely fixed method of getting at costs. This is a most important feature in the lime business, as without such knowledge, intelligent prices cannot be made, nor can the leaks that so easily spring in the best handled establishments, be found, unless there is such a system in use as will promptly and automatically show them up. On this subject Irving Warner will deliver a paper entitled "Cost Keeping at the Lime Plant." He was educated for the purpose of taking active charge of the Chas. Warner Company's extensive lime properties, and has traveled through Europe, visiting the various lime manufacturing establishments, where he carefully compiled data, and got the best European thoughts on the manufacture of lime, and has developed a cost-keeping system that is almost a science. It will be well for the manufacturers, when they get him on his feet, to take the liberty that always goes at our meetings, and ask him any questions pertaining to the lime business they may want light upon, as he is a bureau of information on all matters pertaining to the manufacture of lime.

From England, we will have a paper by Wm. Sewell, M. I. C. E., entitled "Special Points." Mr. Sewell is in charge of the Fulwell Quarries and Lime Works, of Sunderland, England, and from him the manufacturers of the United States will get information as to what our brethren in Great Britain are doing in the lime business. This will be an extremely interesting paper, and will be eagerly looked forward to by everyone who attended the last annual meeting, Mr. Sewell having given one of the best extemporaneous addresses on the manufacture of lime that has ever been offered the association.

The final result of the manufacture of lime, of the care of the quarries, of the keeping of costs, etc., is of but little value, if not accompanied with the knowledge of how to market the product. This subject will be covered by Lowell M. Palmer, Jr., of New York, who has one of the best organized selling departments in the business. Mr. Palmer is located in New York, and entered the New York market a few years ago, unknown to the lime users. Today, the name of Lowell M. Palmer, Jr., means executive energy. Mr. Palmer will give a paper on "How to Organize a Lime Sales Agency," and also as to the results obtained by the Eastern Lime Association.

From the West, a paper will be offered by one of the foremost business men of that section, that will make us all sit up and take notice. It will be a bold and daring paper, and will be offered by Chas. Weiler, of Milwaukee, on the subject, "The United States Lime Corporation." To business thinkers, this paper will be looked forward to with unusual interest. We have read and we know what the United States Steel Corporation has done for steel. What plan is Mr. Weiler going to unfold for the lime manufacturers?

These papers are all of vital concern, and should command the presence of every manufacturer of lime in the United States at this meeting, but added to all this will be the first machinery display that has ever been gotten up for the lime business solely. When this idea was first presented, its possibilities were not realized, and certain small rooms were engaged for the display, but to such an extent has it taken, that it has been necessary to secure an immense hall, where this machinery can be shown. The hydration plant builder will be on hand, the coeprage manufacturer will be there, the gas producer will be represented, the lime kiln constructor will have his blue-prints with him, the quarryman will show his machinery—in fact, every branch of the business will be represented, and there will be seen in the narrow compass of four walls, the most up-to-date methods of handling your plant. It is unnecessary to disant and elaborate on this most useful feature of the meeting; it speaks for itself. If the National Lime Association were to accomplish nothing else than the awakening of inventors and manufacturing concerns to the necessities of the lime manufacturer, and so have them turn their thoughts and energies to working out his problems, it would have accomplished a sufficiency. This, however, is only one of what might be called the side-lines.

The social features will be covered by the heart to heart talks of one manufacturer with the other; the dinner will bring everybody together; and lastly, arrangements have been made for a trip to Buffalo to see Niagara Falls. A boat will leave on the evening of August 13, at 8 p. m., arriving in Buffalo at 7 a. m. the next morning, and leaving Buffalo on the



CHARLES C. KRITZER, CHICAGO,  
Hydrating Evangelist.

following evening, at 8 p. m., arriving in Cleveland at 7 a. m., August 15. The round trip will cost only \$2.50, which will give every member of the association an opportunity to see Niagara Falls, provided as many as 100 will take the trip.

This is the general plan of the semi-annual meeting. You are invited to attend and participate, whether you are a member or not, and I herewith extend to you a hearty welcome.

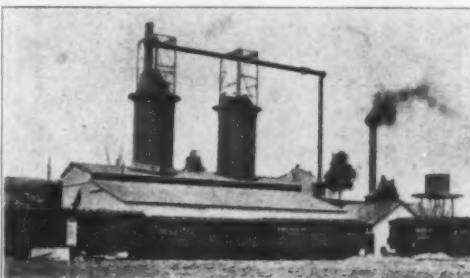
If you want to join the association, send your check for \$25, which will cover your entrance fee, and dues for the current year, to Col. C. W. S. Cobb, Old Manchester Road and Boyle Avenue, St. Louis, Mo., and you will soon find that one-half of the benefits to be derived have not been told.

Yours sincerely, until I see you at the semi-annual meeting,  
WM. E. CARSON,  
President of the National Lime Manufacturers' Association of the United States.

### Fine Equipped New Plant.

The Peerless White Lime Company's plant, located a short distance from the city of St. Louis, is a part of the extensive building material interests of the Hunkins-Willis Lime and Cement Company of that city. The plant is located in the famous St. Genevieve county, where limestone analyzes 99.14 per cent calcium carbonate and which for more than a century has produced a very high grade of lime.

The plant is under the personal direction of D. S.



PLANT OF THE PEERLESS LIME COMPANY,  
ST. GENEVIEVE, MO.



INTERIOR OF THE WAREHOUSE.

Hunkins and it is one of the most complete as well as economically arranged plants now in operation, having reached completion a few months ago. The kiln house is of concrete construction throughout, and a commodious warehouse has been provided for the storage of lime. At this plant the stone is elevated from the quarry to the kilns by means of a permanent traveler, which works automatically. The output has been christened the "Peerless" brand, and it is already popular over a wide territory that is accustomed to using high grade lime.

### Hydrators Can Always Run.

Charles C. Kritzer, general manager of the Kritzer Company, of Chicago, has taken a little vacation trip to Northern Michigan, but it is no more possible for him to keep away from the lime plants in whatever district of the country he happens to be in than it would be for him to live in a vacuum.

He reports that he has closed his second contract for a hydrator with the Castner Electrolytic Alkali Works at Niagara Falls, N. Y. This concern is the largest manufacturer of chlorine bleach in this country, and their hydrated lime must be of perfect quality. Mr. Kritzer deftly explains that, therefore, there was nothing left for them to do but to place their contract for a hydrator with his concern, but joking aside, Mr. Kritzer remarks that he takes no little comfort from the observation that practically every lime manufacturing concern in the country that hydrates its product are running their plants to capacity, while some of those who are not hydrating can only operate part of the time on account of the small demand at the present time, and the impossibility of storing raw lime in large quantities indefinitely.

Incidentally Mr. Kritzer says that he is now shipping a number of his big machines to new Eastern plants, and about the time of the lime convention at Cleveland will likely be able to stop one of the shipments in transit long enough to allow the assembled lime manufacturers to inspect the machinery on the cars.

### Burning With Producer Gas.

Recently a representative of ROCK PRODUCTS called at the plant of the National Mortar and Supply Company, near Gibsonburg, Ohio, where Superintendent Fred J. Wertelewski kindly showed the new and highly successful equipment of lime kilns fired by producer gas. There is no more interesting subject than that of economy of fuel to every lime producer. It is called the Bradley producer-gas process, installed by the Duff Patents Company, of Pittsburgh. It has already proved successful in glass and steel plants in all parts of the country, and now is demonstrated its conquest in the lime business. Two gas producers of the Duff pattern supply a battery of fourteen kilns with all the fuel gas they require, from Pennsylvania and Ohio bituminous coal. The coal is fed to the producer by means of a hopper continuously. The producer is an oval-shaped retort about 8' long, 8' wide and 12' deep. Below the grate in the producer is a layer of ashes, submerged in water, to prevent air entering from below. On either side of the producer are two sets of pipes, four in all, 1/2" in diameter. Through these pipes steam is injected at a pressure of 35 pounds, which carries the proper amount of air necessary to create the gas. This gas then passes into flues 110 feet long and running the entire length of the battery of kilns. The flues are 48" in diameter, lined with fire brick, with an iron shell. Rising above the flue in front of each kiln is what might be termed a gas-box. The flow of gas is regulated by a valve—an inverted plate. From this gas-box the gas passes into a double-shelled spout, the inner shell carrying the gas and the outer jacket carrying the air, which is fed from a galvanized iron pipe running the entire length of the battery of fourteen kilns, and above the gas flues. Air is forced into this pipe by a fan having a 14" discharge. The air and gas are mixed by striking together at the end of the spout against a wall, and so introduced into the kiln above the fire arch. The proper mixture of gas and air is controlled by means of valves and determined by the color of the flame. At its best the flame is a light yellowish color. The natural draft carries the flame 4' above the fire arch.

From the start the burning of lime has continued in the most satisfactory manner, both as regards the burning of the lime, the quality and the economy of fuel. C. W. Bradley, the originator of the process, personally superintended the installation and promptly secured the balance for the mixture of gas and air to make the desired character of combustion for the most effective lime burning. Mr. Bradley has long years of experience in gas producer practice and is confident that he can obtain any result desired in the manipulation of heats, no matter what the conditions may be. He has given a great deal of study to the special requirements of the lime industry and has certainly achieved marked success in the plant herein described.

## FIREPROOF HYDRATING PLANT.

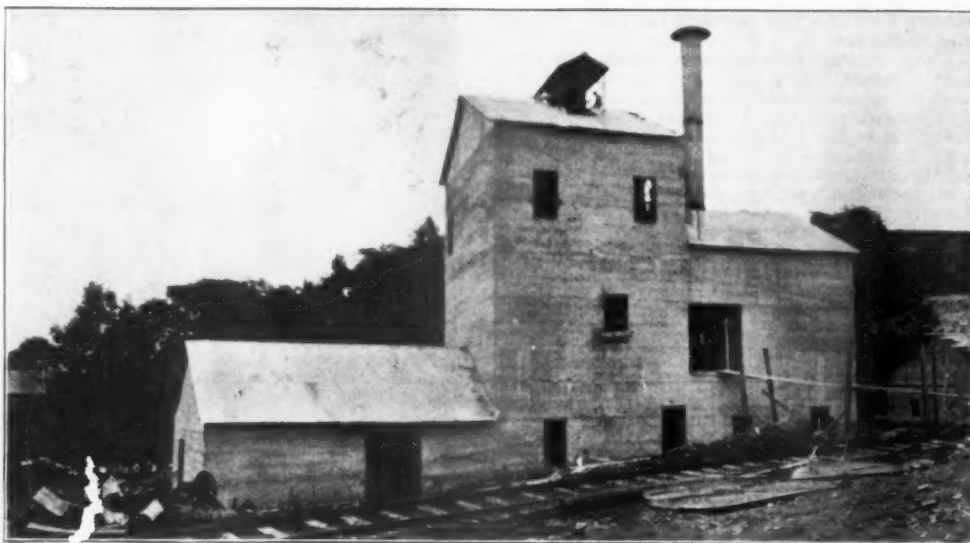
## Highest Type of Perfection Permanently Established.

The Marblehead Lime Company, of Chicago and Kansas City, have just completed their new lime hydrating plant near Hannibal, Mo., and shipment of the product, which is known on the market as "Crown" high calcium hydrate, has just been resumed.

The buildings of the plant are of reinforced concrete construction of the most solid and substantial character, built under the personal supervision of Mr. A. Newton, of the Marblehead company, who, in the construction of this plant has worked out many structural problems to facilitate the operation of the establishment to the highest efficiency. It is equipped with a complete outfit of machinery to hydrate their high calcium lime by the Kritzer process, and the product already produced indicates that they have a perfect hydrate that is chemically pure and completely hydrated, possibly superior in point of hydration and quality of the lime to any other yet produced.

The accompanying illustrations are from photographs that were taken just about the time the plant was completed and ready for operation.

Mr. A. T. Howe, president of the Marblehead Lime Company, in speaking of the new plant remarked:



CONCRETE HYDRATING PLANT NEAR HANNIBAL, MO.



WILLIAMS PULVERIZER AND 8' REEL.

"At least we will not be troubled with any more fires, for the buildings of the new plant have been constructed of concrete. Following our fixed policy, we have endeavored in every way to assemble a plant that will turn out the very highest quality of hydrated lime obtainable, so that the quality of the goods will win their own way in the market."

A little more than a year ago a plant was equipped at Hannibal, which was destroyed by fire last April. The product was well received by the trade, as it was really a perfect high calcium hydrate, and was rapidly gaining friends and recognition amongst the dealers and contractors of the Middle West.

The new plant just started into operation has a calculated capacity of four tons of hydrated lime per hour. A detailed description of this thoroughly modern equipment will doubtless be interesting.

The hydrator building is three stories high, 36x48 feet on the ground, with an iron roof. All of the walls and floors are constructed of reinforced concrete. The warehouse is one-story high, 36x75 feet, reinforced concrete walls and floor and iron roof.

The formula used for the concrete mixture was one part of "Crown" hydrate and one part of Portland cement, measured dry, just the equivalent to 70 per cent Portland cement and 30 per cent of Crown hydrated lime by weight. This was mixed with six parts of sand and gravel as it comes from the bed of a creek in the neighborhood, which upon examination was found to run in the right proportions for concrete work as to its coarse and fine particles. A thorough mixture of these ingredients, with water sufficient to pour the mass between the centering forms for thorough puddling was the method of laying the concrete. Where heavy reinforcement was required, damaged steel rails were used, and damaged wire cable  $\frac{3}{4}$ " in diameter, a large supply of which was on hand, was employed in other portions. The resulting concrete is of a very light color, perfectly waterproof and very hard. In fact, the quality of the concrete is of a very high character, probably superior to anything that could be produced without the addition of the high calcium hydrated lime to the concrete mixture.

The three immense bins that are used in the Kritzer process, for holding raw ground lime, the green hydrate, and finely screened product in rotation as it progresses through the factory, are constructed of the

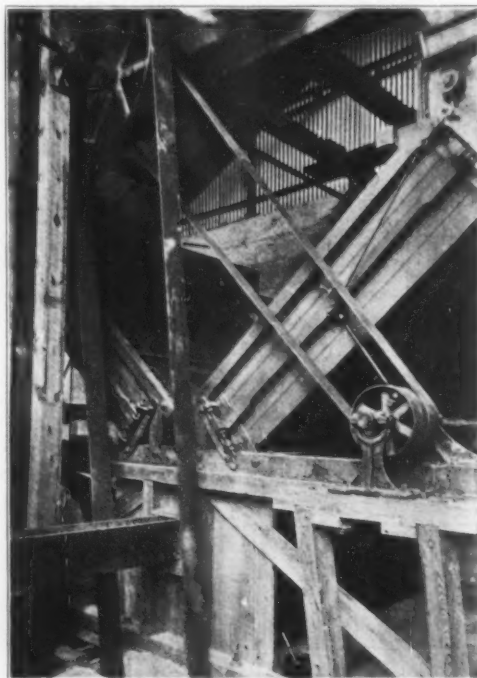
same kind of concrete material. The first-story walls are fifteen inches thick, the second story twelve inches, and those of the third story are eight inches thick. The bins are from eight to ten inches thick. The floors have girders of railroad iron imbedded in concrete, and are finished as solid slabs. In fact, there is no wood used in the construction of the entire plant except the window and door frames. This type of construction amounts to a perpetual self-sustaining insurance policy.

The equipment consists of the largest capacity Kritzer hydrator that has been built, calculated to four tons capacity as stated. Double screening service has been provided, and a Williams pulverizer has been introduced to reduce the tailings that come from the screens, which delivers the material to an eight-foot reel for final separation.

Beneath the finished hydrate bin has been placed a Bates automatic bagger, where "Crown" high calcium hydrate is put in the commercial package that weighs forty pounds, and not the least among the attractions may be noted in the fact that paper bags containing this brand never burst on account of the expansion of the contents, because hydration is completed before the bag is loaded, and there is no further possibility of this kind of trouble.

The usual steel elevators and conveyors of the most approved pattern and of Caldwell manufacture make the necessary connections for manipulating the material in process.

The product of this plant will be handled by the Marblehead Lime Company's sales department, located in the Masonic Temple, Chicago, and in the Long Building, Kansas City, Mo.



DOUBLE SEPARATING SCREEN.

This permanent, efficient plant of large capacity, producing chemically pure high calcium hydrate, marks a pronounced epoch in the advancement of the hydrating feature of the American lime industry. With the conservative yet aggressive Marblehead sales organization, ample outlet for its output will be found.



BOTTOM CONSTRUCTION OF CONCRETE BIN.

## Mr. Williams Makes a Change.

W. C. Williams, associated with the Rock Plaster Company, One Hundred and Fiftieth Street and East River, New York, since its establishment, has been appointed sales agent of the Cheshire Lime Manufacturing Company, Cheshire, Mass., which makes a fine quality of finishing lime. Inquiries for information may be addressed W. C. Williams, care of the Rock Plaster Company, of New York and New Jersey, or at 359 Fulton Street, Brooklyn. Mr. Williams is the secretary of the Mechanics and Traders' Exchange and has been for a number of years also secretary of the Mason and Material Dealers' Exchange, an association in which is embraced the principal building supply trade of the Borough of Brooklyn. A convenient office for the sale of Cheshire lime will, in all probability, be opened by Mr. Williams in Manhattan.

## Waterproof Whitewash.

A formula for whitewash or wall coating that can be applied to any kind of mortar walls, which quickly becomes waterproof so as to bear washing, is given by a German scientific publication of Munich as follows:

Mix together three parts of pulverized marble and sandstone in equal parts, two parts of burned porcelain clay with two parts of freshly slacked lime, while it is still warm, adding sufficient water to bring it to the consistency desired for applying with a brush. In this way a wash is made that forms a calcium silicate, which, if often wetted, after a time becomes almost as hard as stone. These constituents mixed together make a base to which any colored pigment that can be used in conjunction with lime, can be added. It should be applied quite thickly (about the consistency of cream) to the wall or other surface, and allowed to dry for twenty-four hours, after which it should be frequently coated with clear water, which makes it waterproof. This wash or wall coating can be cleaned with water without losing any of its color, on the contrary, each time it is cleaned with a wet woolen rag it gets harder and smoother.





### Modeling The Cleveland Courthouse.

CLEVELAND, O., June 15.—Some clever modeling has been done in this city during the past three or four months by the Ernest C. Bairstow Company of Washington, D. C., in connection with the erection of the new \$4,000,000 Cuyahoga County Courthouse. The Cleveland shop has been in charge of Albert C. Burley, who was chief modeler.

Parts for a full-sized model of the new building were first modeled and then set in place. This large model was twenty-eight feet wide and ninety feet high, with a corner running ten feet back. This was erected for the purpose of giving the architects an opportunity of viewing it, to see how the finished structure would look. A number of changes were made in the model. All measurements were exact and a very pretty effect was produced when the big model was finally finished. Over 3,000 feet of lumber and 150 barrels of plaster were used in the main model.

Models for all of the interior marble and bronze work were also made by the same concern. These were all passed upon by the architects and members of the building commission, and a few minor changes were made in the designs. The total amount of the modeling done for the building reached nearly \$10,000. The Bairstow Company secured the work on competitive bids. A special house was provided on the site for the use of the modeler. A staff of four men was on the work most of the time.

These models are for the use of the various sub-contractors on the job. The stone models are being used by the Milford Pink Granite Company of Massachusetts, the marble models by the Colorado Yule Marble Company. The limestone for the interior or court walls is being supplied by the Indiana Cut Stone Company of Bedford, Ind., and the brick by the Kittanning Company through the Cleveland Builders' Supply Company, which is also furnishing the big order of Lehigh portland cement.

### New Plaster Product.

Gypsinite, a plaster studding has been known for some years in New York City, but up until this year has not been introduced to the trade outside of that city. It is now being pushed all over the country, though it is only manufactured at two mills of the United States Gypsum Company. One of these is the Oakfield, N. Y., plant and the other is at Fort Dodge, Ia.

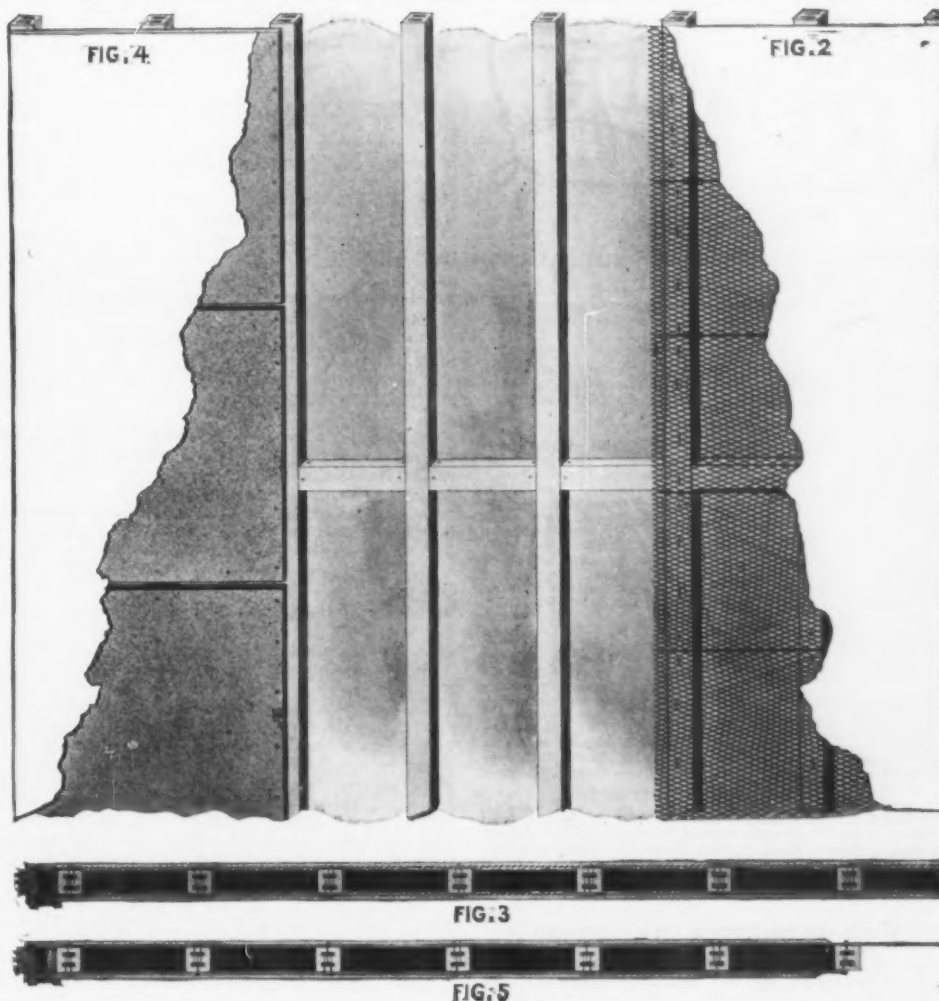
Gypsinite is a fireproof substitute for wooden studding, or what is commonly termed two by four timbers. This studding is composed of wooden nailing strips completely embedded in and protected by plaster. It is cast in molds, and the ordinary stock size is 3 inches by 3 inches by 12 feet. The weight of such a size is about three pounds per linear foot, though it can be made in any desired size.

In the erection of the upright or stud it is spaced sixteen inches on centers, and fastened to the sill and plates with a light galvanized iron clip or socket and six penny wire nails.

To the studding is fastened, as illustrated by Fig. 4, Sackett plaster board, which is nailed or fastened by screws. Fig. 2 shows expanded metal fastened to the studding. Over either one of these surfaces the plaster wall is coated. Thus, an absolutely fireproof plaster wall is constructed. It contains an air space reasonably wide enough to allow for wires or pipes of any kind that may be used in buildings.

To test out the material, the manufacturers conducted a fire test at Minneapolis recently, under the supervision of the Building Inspector of that city. The building or room was constructed eleven feet long, eight feet wide, and nine feet high. The structure was composed of the Gypsinite Studding and covered with Sackett plaster board. This was erected on a concrete foundation and fire built on the floor or grate.

A pyrometer showed that in thirty minutes the heat inside the room was nearly 1,800 degrees Fahrenheit, while the heat on the outside walls was 160 degrees. Owing to the fact that the materials were not thoroughly dried out before the test the best results could not be obtained, but a fair enough idea was obtained to convince the spectators that the material would do the work. After the test the outside walls were intact, though on account of the dampness, the surface plastering on the inside had fallen into the fire.

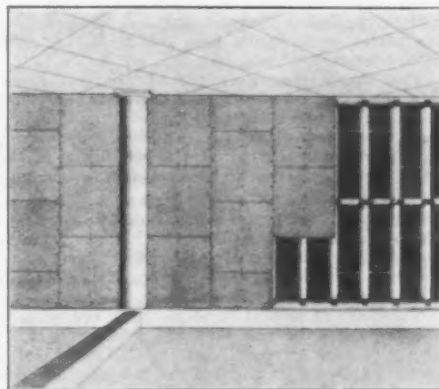


Some of the important buildings in the East where Gypsinite studding has been used are: The First National Bank at Stamford, Conn., designed by Tracy & Swartwout; the Electrical Exchange Building, New York City; the Hotel Savoy, New York City; the Christian Science Church, Boston, Mass., designed by Charles Brigham; the Norwegian Hospital, Brooklyn, N. Y., designed by Delbi & Howard.

### Increase the Output.

CARSON, NEV., July 5.—The Moundhouse Plaster Company has been incorporated for a capitalization of \$250,000, and the company is preparing to enter upon a greater business era than ever before, owing to the great demand for the output. The incorporators are Frank, Edward and James Regan.

The property operated by the company is situated at Moundhouse and comprises 360 acres of land. The gypsum deposit covers the entire ground, and instead of mining, the gypsum is simply scooped from the ground and taken to the mill, which is near at hand. Plows are used to loosen the mineral and then road scrapers are used to throw it into the bins ready for the milling.



MODEL OF GYPSINITE STUDDING, WITH SACKETT PLASTER-BOARD.

The company has erected a mill at the place costing about \$30,000, and with a capacity of sixty tons.

### In the Virginia Field.

HAMPTON, VA., July 15.—The Plaster Products Company of this place has been organized and incorporated for \$25,000. The company will manufacture plaster. They have secured a site and will erect the mill immediately. The officers of the company are: President, G. W. Rowe; vice president, Vernon Spratley, and the secretary, G. A. Howard.

The Rock Plaster Company of New York City has been incorporated for \$350,000. The directors of the company are J. W. Rufus Besson, Dr. L. Haigh and S. L. Cromwell, 36 Broad Street.

### Large Gypsum and Alum Deposits.

RICHFIELD, UTAH, June 1.—The Jumbo Gypsum and Cement Company, organized a short time ago with capital stock \$250,000, has located twenty-eight quarter sections of gypsum land and intends to erect a mill near Sigurd, in Sevier County, Utah. The officers of the company are: Hon. J. F. Chidester, president; Ferdinand Erickson, vice-president; Niels C. Poulson, secretary and treasurer; Lorenzo Nielson, James Christiansen, R. W. Sevy, J. H. Erickson and H. N. Hayes, directors. They expect to have the mill in operation by October or November. The mill will be within two miles of the railroad and within one and one-fourth miles of the Sevier River and will be run by waterpower. The company has also located two quarter sections of alum, which they intend to work in connection with the gypsum, making Keene cement. They have ordered their mill from the J. B. Ehrman Manufacturing Company of Enterprise, Kan. It will be of 100-ton capacity. A spur will also be built from the railroad to their mill.

### Newly Incorporated.

The Dallas Wood Fiber Plaster Company has been incorporated with \$15,000 capital, and will establish a wood fiber plaster factory at Dallas, Tex. W. H. Harris is president and E. P. Wilson secretary and treasurer.





## The National Builders' Supply Association

Meets Semi-Annually.

### OFFICERS.

Gordon, Willis, St. Louis ..... President  
Harry W. Classen, Baltimore ..... Treasurer  
Harry S. West, Spitzer Bldg., Toledo ..... Corresponding Secretary  
James W. Wardrop, Pittsburg ..... Executive Secretary

### VICE-PRESIDENTS.

Arkansas ..... Charles E. Taylor, Little Rock  
California ..... C. J. Waterhouse, San Francisco  
Delaware ..... Charles Bye, Wilmington  
District of Columbia ..... S. D. Lincoln, Washington  
Georgia ..... V. H. Kriegshaber, Atlanta  
Illinois ..... H. C. Irwin, Springfield  
Iowa ..... R. Hay, Dubuque  
Indiana ..... H. B. Lyman, Lafayette  
Kentucky ..... Marion M. Allen, Newport  
Louisiana ..... W. F. Jahneke, New Orleans  
Maryland ..... J. J. Kelly, Baltimore  
Massachusetts ..... James A. Davis, Boston  
Michigan ..... S. J. Vail, Detroit  
Missouri ..... C. S. W. Cobb, St. Louis  
Minnesota ..... John Wharry, St. Paul  
New Jersey ..... A. Tomkins, Newark  
New York ..... M. A. Keeb, Buffalo  
Ohio ..... Frank Hunter, Columbus  
Pennsylvania ..... Cyrus Borgner, Philadelphia  
Rhode Island ..... C. M. Kelly, Providence  
South Carolina ..... A. G. Gower, Greenville  
Tennessee ..... J. C. Lovelace, Memphis  
West Virginia ..... R. W. Marshall, Wheeling  
Wisconsin ..... R. C. Brown, Oshkosh

### EXECUTIVE COMMITTEE.

Gordon Willis, Chairman; Frank S. Wright, Chicago; John A. Kling, Cleveland; Charles Warner, Wilmington; J. C. Adams, Pittsburg; Richard Kind, Toledo; James G. Lincoln, Boston.

### Official Organ, ROCK PRODUCTS.

### Words of Cheer From Our President.

Editors of ROCK PRODUCTS: You ask my opinion of trade conditions and the business outlook for the future. I am very strongly of the opinion that the slump that has existed in business for the past several months is now about over and that improvement in conditions will be gradual, yet continual, until fall, when normal and satisfactory trade should exist.

St. Louis started the prosperity boom which has spread throughout the United States. It was the belief of many that the betterment in consequence of this move was in sentiment rather than in operations. The natural feeling was that we had arrived at a point where any change must be an improvement. While it is true that prices in almost all lines are down to a minimum, yet the growing demand in this country and abroad for farm products and manufactured articles certainly means increased prices and better times.

One strong evidence of prosperity is the fact that the railroad statistics show that the number of idle cars has been reduced within the past few weeks over 30 per cent. Bradstreets report that June shows a substantial improvement in building operations all over the United States, and I predict that July and August will show a further improvement. It is reported that the steel mills at Pittsburg and the mining and coke districts adjacent are actually having difficulty in getting labor, which may be attributed possibly to the large number of foreign laborers who returned during the past few months to their native homes. Should not this, however, be considered as beneficial in lessening the number of idle men?

The conditions existing in the building trade were never more advantageous for building than at present. Building materials of all kinds are cheaper than for several years. Contractors are figuring closer, labor is generally more abundant and wages are comparatively lower. Now is the opportune time to build, be it a dwelling, mill or office building, as the cost will be considerably less than a year ago or will be in the near future. Higher prices will inevitably come as soon as business revives a little more. Building materials must increase in price, higher wages will prevail and normal conditions will follow.

Confidence is restored. Let enthusiasm and determination follow, and depression is gone for 1908 and prosperity will prevail for 1909.

GORDON WILLIS,  
President National Builders' Supply Assn.

### "Funfest Extraordinary."

The members of the Ohio Builders' Supply Association are all making memorandums thusly, "Off the job," on their calendars on August 7 and 8, the dates selected for their annual summer meeting and outing at Put-in-Bay, Ohio.

Judging from the unusual hustle displayed by those in charge this meeting should prove an immense success, as they are untiring in their efforts to provide ample entertainment to make this the banner meeting of the organization.

The Executive Committee is to be complimented on its foresight in selecting such an ideal meeting place as Put-in-Bay, as this famous resort is noted the world over for the inimitable conveniences and advantages afforded conventions.

The meeting will open on August 7 with an address from President Fay, after which the members will devote some little time to the discussion of those matters pertaining to the welfare of the organization.

On Friday afternoon the members will be addressed by James W. Wardrop, Executive Secretary of the National Builders' Supply Association, on the subject, "Who Is the Dealer?"

On account of Mr. Wardrop's extensive experience in the National body, this discourse should prove of decided interest.

Mr. Wardrop's address will be followed by a paper entitled "Concrete Waterproofing," by Mr. A. H. Gallagher, of the Maumee Chemical Company, Toledo, O. Mr. Gallagher's familiarity with his subject assures the organization of a highly enlightening paper.

On the evening of August 7 a boat ride is planned. August 8, the second day of the meeting, will be devoted largely to the entertainment of the dealers and their wives and children. At 9:30 the party will visit Perry's cave. This historical spot is one of the grandest sights on the island and should prove a decided novelty. And last, but by all means not least, comes the biggest feature of the outing, "The baseball game between Mr. George Gengnagle's 'Tigers' and Mr. J. W. Thomson's 'Cubs.'" Both managers insist that their team is going to carry off the honors and a gruelling battle is looked for.

Judging from the number of dealers who have already signified their intention of attending, the meeting will be by far the largest ever held by the organization.

Every dealer in the state, whether he is a member or not, should make up his mind to attend this meeting. The business session will be fraught with interest for every man who sells supplies. You will certainly miss a rare treat if you do not go. Aside from the real benefits accruing from being a member and listening to the papers, there will be fun for everybody. This is a good chance for an outing for the whole family, so take them along.

### The Rader Process Patent Plaster Apparatus.

In this issue will be seen the full-page advertisement of the Gustave Rader Company, 1105 Metropolitan Avenue, Brooklyn, N. Y.

To say the least, this company is introducing a very unique apparatus, inasmuch as it enables builders' supply dealers and others to become their own manufacturers of plaster boards.

The increasing popularity of plaster boards is well known and they are by no means new to the market; however, a simple apparatus enabling the small manufacturer to compete on equal terms with any manufacturer of plaster boards is in its line quite original.

Mr. Rader has had many years' experience in the manufacture of plaster and such materials, and has succeeded in securing many very important patents, about which more will be said in the future.

Both the Rader plaster board and the Rader molding tables, upon which they are made, are covered with patents.

The boards themselves are of toughest construction, rendering them proof against breakage in transportation or rough handling about a building. The New York representative in testing many samples found it impossible to completely break a board, which proves, as Mr. Rader says, that "you have to saw them in two."

The boards also are so made as to furnish two distinct surfaces to be used for different purposes, the plaster side being of such a finish as to allow of its being used as a finished coat under any conditions. Nails can be driven through it as through wood.

There are at present three plants in operation making these boards, and they are working to full capacity to meet an ever-increasing demand. No great outlay of capital is required for the installation of a complete Rader plant, nor is the room required for operation of any considerable consequence.

A representative of ROCK PRODUCTS upon inspection

tion of the plant of the Gustave Rader Company found that but one skilled man was required where the output was 1,000 boards per day. The apparatus is exceedingly simple in operation, while its practicability and the quality of the Rader plaster board can be best attested when it is said that one of the largest plaster manufacturing concerns in the East has secured the New England rights from the Gustave Rader Company and is now making and selling the boards by thousands. Their plant is located on Staten Island. The other plant is located at Providence, R. I.

The machine, if indeed it can be so called, makes boards from one-fourth to one inch in thickness, and although such thickness would not be desired, the fact testifies to the adjustability of the apparatus.

The Gustave Rader Company is prepared to show that builders' supply dealers can make these boards and make them so good and so cheap in price as to be able to compete with any other make on the market.

It is the idea of the company to license various parts of the United States and Canada to responsible parties for the manufacture of this popular product. As stated before, the New England States have already been secured, while the Rader Company will fill the wants of the New York trade, increasing the capacity of their plant from time to time as necessary.

### New Concern With Good Prospects.

The Argo-Clearing Coal and Supply Company, Summit, Ill., has just gone into the supply business at a location in the environs of Chicago, which is now little short of a prairie strip of fortunately located land, but which will ere long blossom into a thriving town, for the cards are all stacked that way. G. F. Chamberlain is the head of the enterprise and he is now busily engaged in getting a stock of supplies together. He has secured a four-acre tract to accommodate his yard, located beside the Chicago & Alton tracks on one side and with the Indiana Belt and Chicago Terminal on the other side. Suitable warehouse and office buildings will be erected at once, and already the assembling of the stock of goods has begun. The Corn Products Company are to erect their mammoth plant nearby, and this concern will furnish the materials. A. W. Eisenmeyer, of Granite City, has been the angel associated with Mr. Chamberlain throughout all the preliminaries, and Arthur is well known to fame as a good angel—anyhow, he is lucky himself, and it is good luck to know him. We just take the liberty to predict that Mr. Chamberlain will be a popular member of the National Builders' Supply Association as well as the Illinois Masons Supply Dealers' Association, for he is the right kind of a progressive business man to fit in any good company.

### Scribo on the Mississippi.

St. Louis, July 6.—On a bright day last week, during the high stage of the river, I thought well of the proposition to take a trip on the new steamer Alton. At 9:30 A. M. the boat pulled out from the wharf and headed up the Mississippi for the day's excursion. We soon passed the city settling basin, where Col. C. W. S. Cobb delivers the Glencoe lime for the purification of the water consumed by the dwellers of the Mound City. A little farther on we came to the barge of the McKinley bridge contractors, and I noted one of the piers for the bridge showing its top above the surface of the river.

Glancing along the St. Louis shore, I saw at one of the stations of the Union Sand and Material Company, several of their steel freight cars near their powerful swinging crane, awaiting loading of river sand from the tow of barges, while farther north the smokestack of the company's big cement plant could be seen towering above the thick growth of trees which skirted the river.

Embowered amongst the trees my eye caught sight of a sign on a building bearing the legend, "Illinois Powder Company," and learned it was one of their material warehouses.

Just beyond the city of Alton a fine view was had of the cliffs, which contribute so greatly to the scenery of the Illinois side of the river, reminding one of the Palisades of the Hudson. These immense hills of limestone, as is well known, have been for years the source of supply for crushed rock for various purposes, and also for the manufacture of lime. If I had borrowed the pilot's glass as I sat looking out of the window, it is likely I would have seen H. C. Barnard, of the Queen City Quarry Company, giving directions to the foremen or else spied Harry Watson, of the Alton Lime and Cement Company, riding along by the C. & P. & St. L. tracks on his way back to the city.

Nearby was the Armstrong Lime and Cement Company's plant, and next in order was the Standard

Quarry Company, while along the river bank were moored the barge and tow-boat of the Mississippi Sand Company.

The boat sped past Elsie too rapidly for me to recognize Mr. Marshall at the Western Whiting and Manufacturing Works, and when we arrived at Grafton, I refrained from warning the pilot that the boat was about to mount up the street leading to the river. These pilots seem to know how to stop a boat just in the nick of time. The most prominent feature of Grafton is the derricks and works of the Grafton Quarry Company, but though I looked around sharply I failed to see J. S. Roper, the well-known secretary of the company.

About this time the call for dinner wafted up from the saloon deck, and I left the self-imposed task of watch in the pilot house to refresh the inner man.

Later on, resuming my task, I inquired where the Illinois River was and learned we were then in it. Somehow the air produced a drowsy effect and I lost myself for a little while. When I "came to" the boat was making a landing. "How is this?" I inquired, "are there two Chautauquas, one in Illinois and the other in Missouri?" Then I was informed the boat had put about and was proceeding on the way to St. Louis.

Falling in soon afterwards with Capt. Leyhe we discussed the plans for the development of the river, while he pointed out the various problems which must be met and solved. As we passed the mouth of the Missouri, he jerked his head in that direction, remarking sagely that the giant river at its junction with the "Father of the Waters" presented the worst one of all and could only be solved by letting it alone and building a canal from the Illinois River, thus flanking this wide stretch of silt-laden water.

### Moving Along Nicely.

Harry S. West, the man who is always on the job, the corresponding secretary, in other words, of the National Builders' Supply Association, has a few pertinent remarks to make as to the benefits to be derived from associations. You can always depend on Mr. West to be ready when the bugle sounds calling them to the post, and he naturally thinks that everyone else should be ready also. He says:

"Everything in the National Association is moving along nicely and we continue to add to our membership list, still we find in some instances that the association subject is not given due consideration by many of our business men of today. However, to those who have affiliated themselves with one of the associations the question of doubt as to the benefits derived from the affiliation has long been dispelled from their minds.

"You find among the association element business men of every calling, prosperous and progressive business men, men who desire to keep pace with the trend of the times, and who find that to do this membership in the association is very essential, as it is impossible to pick up any one of the many trade journals of today but what you find 'something doing' among from one to a dozen or more of these various organizations.

"The numerous associations certainly would not be in existence were it not for the fact that they prove beneficial to members, therefore, we are unable to understand why many defer joining hands with those who have taken the initiative in an effort to promote what has been well and justly termed 'good business ethics.' It is certainly due to the fact that the subject of association has not been given the consideration it so justly merits.

"At the recent meeting of the Executive Committee thirty applicants were elected to membership, and we hope to have twice that many by the time of the next quarterly session, which will no doubt be held the latter part of July or first of August. At this session I presume the question of a place for holding the next Annual Convention will be taken up, and perhaps a decision arrived at, but the subject was not touched upon at the last session."

### Represents Eastern Firms.

SAN FRANCISCO, CAL., July 13.—The Willkomm Building Supply Company now has its offices with its warehouse at No. 151 Tehama Street, near Third, and have added facilities for supplying materials and executing contracts in their various lines. A. Willkomm, the well-known building material dealer, is President of this new firm, which is incorporated under the laws of the States of New York and California.

During his recent trip East, in the early part of the year, Mr. Willkomm convinced a number of his principals that San Francisco offered an excellent field for business, and as a result the Willkomm Building Supply Company represents some of the largest and best known Eastern manufacturing companies. The American Luxfer Prism Company is in

this combination, and J. E. Dwan will personally attend to the matter of sidewalk lighting.

The Willkomm Building Supply Company are also agents for Asbestolith Fireproof Flooring and Wainscoting, Toch Brothers' R. I. W. damp-resisting paints and compounds, the New York Prism Company, the Union Fibre Company's Lith and Linofelt sound-deafeners, the New York Interlocking Tile Company's odorless rubber tile, the Acorn Natural Ventilator, the Duplex Filter, Winslow's Hydrolytic Coating for over-coming water-pressure, etc.

Special interest is attached to the lines of fire-proof doors, windows and trim, which the new firm offers in a wide choice of design and finish; and also to their steel lockers and cabinets.

### New Company Formed.

NORTH ADAMS, MASS., July 12.—The Farnam Lime Works has been incorporated for \$40,000 under the name of the Harry M. Farnam Company. The directors are Thayer B. Farnam, President; Harry M. Farnam, Treasurer, and George Heisler. The purpose named in the papers is dealing in lime, brick and cement.

### Lime For Sour Soils.

Prof. A. M. TenEyck, of the Kansas Agricultural College and an authority on soils, gives the following thoughts on lime for deficient and sour soils:

"Fall is doubtless the best time to apply lime on land to be used for spring crops. A good plan is to scatter the lime after plowing, and harrow to mix the lime with the soil. If air-slacked lime is used, it may be spread with the shovel directly from the wagon. Usually it is considered better and cheaper to apply the quicklime. At the present time you can buy quicklime finely ground, so that it can be spread directly on the ground. Usually quicklime is bought in large lumps, when it may be applied to the soil by the following method: The freshly turned lime is placed in heaps, 20 feet apart, the amount of each pile depending upon the rate of application. Twenty pound heaps would make about two tons per acre. The heaps are well covered with soil. If the earth is moist it will absorb enough moisture to fall into fine powder in a few days at least. In case the soil is very dry, throw at least half a pail of water over each heap before putting on the soil. As soon as the lime becomes slacked it should be spread from the heaps as evenly as possible and then placed under, or preferably harrowed at once. If the lime is left on the surface without harrowing it is apt to form a cake with the soil and will not give so good results as when mixed with the soil.

"It is also practicable to apply lime to the soil early in the spring, mixing it well with the surface soil and cultivating, or it may be preferable to plow it under, unless it can be applied to the surface at a considerable interval preceding the sowing of alfalfa, since quicklime is a caustic and too strong a solution of it at the surface will destroy the young plants. The air-slacked lime, which is really the carbonate of lime, does not have the caustic effect of the quicklime and may be safely spread on the surface of the soil early in the spring. It is also possible to distribute air-slacked lime with the fertilizer attachment with which some grain drills are supplied. Choose a quiet day to make the application, since the distribution of lime is a disagreeable task, irritating the eye, nose and mouth.

"Later investigations seem to indicate that it is better to apply smaller quantities of lime at lesser intervals rather than to apply larger quantities at longer intervals. In the case of light dry soils a range of application may be from 15 to 30 bushels of quicklime per acre; on heavy clay soils and rich land the application may vary from 25 to 75 bushels per acre.

"It is not considered so beneficial to the soils to apply air-slacked lime as to apply quicklime, and if the air-slacked lime is used, a larger quantity should be applied than if quicklime were used.

"Gypsum or land plaster, is chemically a combination of lime with sulphuric acid. Large mines of gypsum or calcium sulphate have been discovered in this state and the salt is now being mined. We have not used it at this station, but land plaster is often used as a fertilizer for soils which are deficient in lime and in some respects its application is claimed to be more beneficial than the use of lime. It was my plan, however, that the experiments for liming the soil should only be carried out at first in a small way. In this way you can learn by actual experience."—Exchange.

The Wheeling Wall Plaster Company have closed a contract to furnish all the sewer pipe needed by the city of Wheeling, W. Va., during the coming year.

## SAND KNOWLEDGE.\*

### Testing, Grading and Mixing for Perfect Aggregates. Home-Made Testing Apparatus.

BY JAMES F. HOBART, M. E.

Third and Last Installment.

[The author of this most valuable treatise, which was prepared and edited especially for ROCK PRODUCTS, is more especially interested personally in the manufacture of sand-lime brick. The subject has been handled, however, in such a manner that what is here said applies equally to concrete in all its branches. Practically every failure in the manufacture of concrete commodities as well as sand-lime brick could be avoided with the use of the information contained in this series of papers. Mr. Hobart is an expert on sand, and the clear, concise and scientific manner in which he sets forth his facts and deductions stamps him as an authority. This treatise was begun in the May, 1908, number of ROCK PRODUCTS and will later be reprinted in book form.]

#### HOME-MADE, ACCURATE WEIGHING SCALE.

The scale illustrated by Fig. 10 was built by the writer from material found in any ordinary country tinner's shop and a rural hardware store. The scale is sensitive to 1/100 of a gram, metric system, and reads either to 1/1000 of an ounce or to 1/40 of a gram. The scale has been worked to a capacity of 4 ounces, and is good for greater weight—how much, the writer has never had occasion to try. The principle of the scale is a modified form of the torsion balance for the beam suspension, and steel wire suspensions for the pans, with a beam weight or poise and vernier graduations to the limit above noted.

FIG. 10.—ACCURATE HOME-MADE WEIGHING SCALE.

The material required for making this balance is as follows:

- a. 1 board 5"x18"x $\frac{3}{4}$ ", planed all over.
- b. 1 board 5"x12"x $\frac{3}{4}$ ", planed all over.
- c. 1 board 1 $\frac{1}{4}$ "x18"x $\frac{1}{2}$ ", planed all over.
- g. 3 cap screws or machine bolts,  $\frac{5}{8}$ "x2".
- 1 piece wire, No. 8 to No. 11, 24" long.
- a. 2 wood screws, 3", No. 14.
- h. 2 coat hooks, iron or brass, 5" long.
- h. 4 wood screws for same, flat head,  $\frac{3}{4}$ " long.
- j. 12" E or A violin string.
- k. 1 plumb-bob, 1 or 2 ounces, lead, brass or iron.
- e. 2 lag screws  $\frac{1}{4}$ " or 5/16"x4".
- p, q, f. 24" steel piano wire, No. 23 or No. 24.
- m. 1 cut washer,  $\frac{1}{2}$ ".
- m, d. 4 screws, No. 6, round head, brass,  $\frac{3}{4}$ " long.
- n. 4 screws, flat head, brass,  $\frac{1}{2}$ ", No. 6.
- p, q. 4 screws, No. 6, round head, brass,  $\frac{5}{8}$ " long.
- x. 1 brass wood screw, round head, No. 16, 3" long.
- o. 1 strip sheet brass,  $\frac{3}{4}$ "x12", No. 24 or No. 26.
- r. 1 piece sheet brass, 2"x8", No. 12 to No. 20.
- s, v. 1 piece sheet brass, 4"x8", No. 22 to No. 26.
- t, w. 36" galvanized (or brass) wire, No. 18 or No. 20.

2 ounces soft solder (half and half).

$\frac{1}{2}$  pint orange shellac.

z. 1 bicycle spoke with nut.

If a bit of mahogany or baywood is attainable, it will make a fine scale, but in the absence of more desirable lumber clean white pine answers well, and was used by the writer. Plane and square up the three pieces to the dimensions given in Fig. 10, and fix the standard b, firmly into base a, by means of the groove shown and two 3" No. 14 wood screws let in from the under side of the base. Make the standard fit well and stand square with the base. Cut out the top end as shown, to clear the beam beyond all possibility of its touching, even when the torsion wire becomes a little slack.

Put in the round-head bearing screws, d, d, to carry the torsion wire f, and the tension pins e, e, which are made from the 4" lag screws, the heads being cut off, the ends squared up and a hole drilled through each to receive the ends of the piano wire or torsion wire, f. The three cap screws are put through the base, a, to serve as leveling screws, as will be described later, and two coat hooks, h, h, are screwed to the standard so as to give the beam about  $\frac{1}{4}$ " movement vertically—no more.

The beam c is fitted up as shown by the engraving, the washer m having two holes drilled through it to receive its holding screws as shown. Two screws, n, are put into the beam underneath washer m, and the slots of these screws must be placed very square with the beam to receive the torsion wire f, which is clamped fast against the screws n, by means of the washer m. The heads of the screws n are left flush with the top of the graduated brass strip, o, one end of which is also secured by one of the screws through m. It is desirable that the three points of suspension of this scale, f, p and q, together with the sliding weight or poise, r, should all lie in the same horizontal plane when the scale is on a balance. This is accomplished with the exception of the slight departure of q from a true level, but as that device is

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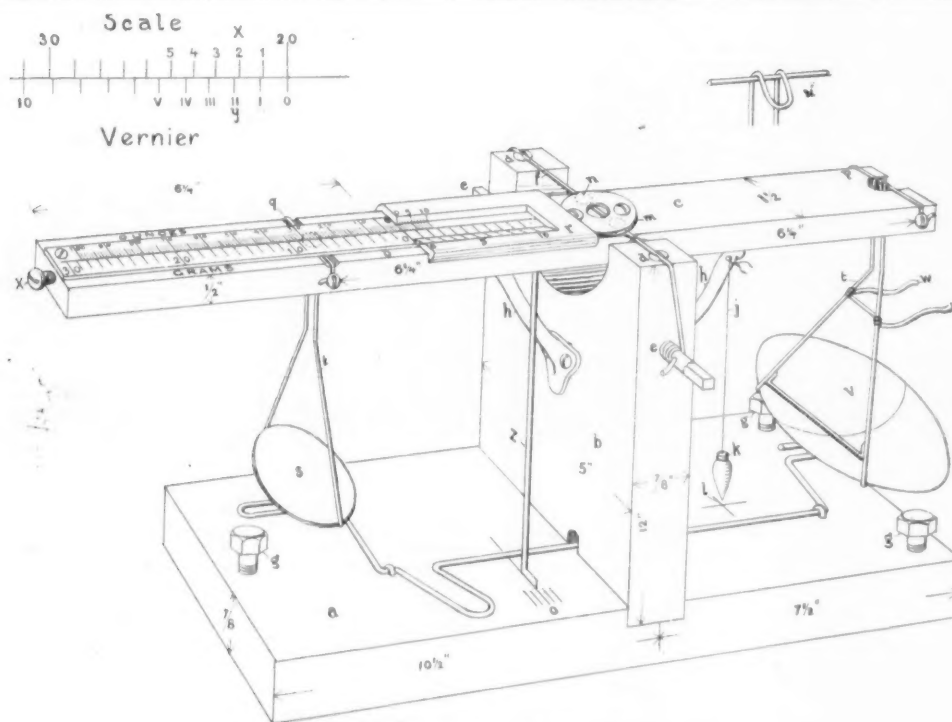


FIG. 10. ACCURATE HOME-MADE WEIGHING SCALE.

seldom used, and only for coarse weighing when extra weights are placed in *s*, there is no appreciable error due to *q* being placed below the graduated scale.

Holes are bored through the beam for pan wires *t*, *t*, which are hung upon piano wires *p* and *q*, which, in turn, are tightly stretched and held in place by the screws shown for that purpose. It is vitally necessary that both *p* and *q* be placed accurately  $6\frac{1}{4}$ " from the torsion wire, and that all three of these wires be exactly square with each other and with the beam *c*. Upon this depends the accuracy and sensitiveness of the scale, and without accuracy at this point the work will be a failure. The distances between the wires will weigh as well at any other distance than  $6\frac{1}{4}$ ", but this length is used for ease in graduating the scale of 1 ounce on brass strip *o*. The ounce is divided into 100 equal parts, and by using  $6\frac{1}{4}$ " as the total length the graduation can be taken directly from a carpenter's rule and drawn to sixteenths of an inch. If a distance greater or less than  $6\frac{1}{4}$ " be used, graduation cannot be made to sixteenths of an inch.

The plumb-bob, *k*, is suspended by the bit of fiddle string from a hole through one of the knobs on the end of the coat hooks. The base, *a*, is leveled accurately, and a mark, *l*, is made directly below the plumb-bob. By adjusting the screws, *g*, *g*, *g*, until the bob, *k*, hangs directly over mark *l*, the scale will be leveled in both directions. Therefore, when using the scale, see that the bob hangs plumb over mark *l*.

The method of suspending the pans is shown by the detail *u*, and the wire frame *t* is so bent and soldered that the pan, *v*, simply hangs upon *t*, and may be removed and replaced at will. The construction of pan *v* is fully shown by Fig. 11. The piano wire clip, *w*, is twisted around frame *t* in such a manner that a test tube may be stood up in the pan and held in an upright position by the clip *w*, which remains permanently in position as shown, being twisted around *t* and soldered fast. Pan *s* is simply a bit of flat brass, soldered to its frame, *t*, and it cannot be removed without taking off the brass scale, *o*.

The screw *x* is for the purpose of balancing the beam after the pans and poise, *r*, are in place. The screw moves easily in or out by means of the fingers, and other weight should be attached to the under side of the beam to bring the balance within command of the screw *x*. The poise, or sliding weight *r*, is made of sheet brass, which is weighted with solder, after the thing is otherwise finished, until it weighs exactly one ounce, as near as can be ascertained. All weighing is only refined guessing, and with this scale a man can guess to the 1/100 of a gram, while with the grocer's scale one guesses to the 1/4 ounce.

The weight of *r* may be obtained either from the local druggist, who will weigh it carefully and enable the scalemaker to file off some solder, or put more on, as the case may be, until the weight is as close to 1 ounce as it is possible to make it, or the weight may be worked up from the metric standard.

With this scale, ordinary 5-cent nickels may be used as weights on the pan *s*, and with the scale in balance the nickels will balance exactly 5 grams each in pan *v*. The nickels of 1907 should be used, as those of 1906 are slightly overweight, and the nickels of 1905 are considerably overweight, as will be readily detected by the scale we are making. Bright, new nickels of 1907, without wear, weigh very closely to 5 grams each, and may be used for building up the gram scale on the beam. The ounce scale may be developed directly from the gram scale. In fact, the ounce scale develops itself, once the poise *r* is brought to one ounce in weight.

The scales on *o* may commence anywhere on the beam, the only requirement being that a balance is made with the beam with the weight *r* in place; then the graduations on the scales begin at the reading end of *r*, no matter where that may be. For convenience, in setting the sliding weight to zero, it is made to lie against washer *m*, and the graduations on *o* are pulled along until the zero on both *o* and *r* coincide with each other. Although it makes no difference where the scales *o* may be located on beam *c*, it does make a difference where pan *s* is suspended. That affair must be the same distance from *f* that *p* is placed, and the length of the ounce scale must be of the same length as *f*, *p*, and *f*, *q*, or *t*. This allows the sliding weight to be made up and finished to exact weight, then the scale *o* can be located, after it is finished, if you will, and then fastened by the screw as described elsewhere.

The weight *r* carries two verniers, one for the ounce scale and one for reading to 1/10 gram. To develop these verniers it is only necessary to lay off 11 grams, beginning at the zero end on *r*, and divide the 11 grams into 10 equal parts, each of which will represent 1.1 gram, and by sliding the vernier scale along until two marks coincide, the number of tenths is read directly from the number of the vernier division which coincides with a division on the scale *o*.

The detail sketch *x* shows a portion of the scale while *y* represents the graduation of the vernier. Eleven spaces on the scale are divided into 10 spaces on vernier *y*; then, if that object be moved along until *l* comes even with 1, the reading will be 20.1. When 2 and 11 are even the reading is 20.2, etc. The length of the sliding weight *r* is fixed by the gram vernier, and the open jaw of the weight must have ample room for the vernier graduation of 11 divisions. As one ounce equals 28.35 grams, it is easy to locate that point on the graduated scale, and we find that .01 ounce = .2835 gram. Also that each gram division must equal  $1 \div 2835 = 3.527$  of the .01 ounce divisions. Carrying this forward until "even money" is reached, it is found that when 17 grams are taken as a start, the ounces will be  $17 \times .03527337 = .59965729$ . Hence it will be sufficiently accurate to start at .6 ounce (60 on the ounce scale) and call that point 17 grams.

Then space to the zero point, making it 17 spaces,

and mark each one as a gram division. The spacing may be carried in the other direction, once the dividers are set, or the scale is adjusted as in Fig. 9, and the graduation carried to the end of the beam scale, which should be long enough to carry 30 grams, a little more than one ounce. To check the centimeter graduations, place a 1907 nickel in the pan and move the beam weight *r* to the 5-gram mark. If the scale shows a balance, all is well; if not, there is something wrong, and it must be hunted for and corrected. Check likewise, with 2, 3, 4, 5 and 6 nickels in the pan, moving the weight to 10 grams, 20, 30, etc. Also test with 3 nickels in each pan, and with other combinations, until satisfied that everything is correct.

Another test: Weigh one ounce in the pan, remove the weighed matter and also remove weight *r* from the beam, and balance the scale by placing a small weight on the beam and moving it along until the beam comes to a balance. Then, without disturbing the temporary weight on the beam, place the ounce in one pan and weight *r* in the other pan. They should balance exactly.

One point has been overlooked in the description of the scale. On the baseboard there may be seen a wire extending from one pan to the other, through the standard, and held in place by means of two staples made of the same wire. This affair is for the purpose of damping (stopping) the oscillations of the scale beam, which vibrates freely and for a very long time, there being absolutely no friction to the suspension of the scale beam. Even with a much larger wire than No. 23 or No. 24 the beam will vibrate for a long time before coming to rest, and the wire damping affair saves stopping the beam with the fingers, which is a very clumsy method and should never be used. By placing a finger on the bent-up portion of the wire the pans are both brought to a stop by the wire, which should be so adjusted that the beam is exactly on a balance when the pans are thus stopped. The bent-back ends of the wires under the pans are for the purpose of making that portion of the wire heavy enough to return to the baseboard by its own weight after having been thrown up against the pans. Only enough wire may be left thus to secure the desired effect, the balance being cut off to lighten the damper as much as possible.

The list of material calls for a bicycle spoke, which is to be found at *z*, doing duty as a pointer, the hub end having been cut off and a short portion bent at right angles and filed thin and flat and placed as shown, the nut being forced into a hole in the beam so the pointer may be reversed in or out, as desired. The marks on either side of the center mark are of value when weighing, as the length of oscillation of the pointer may be balanced by adding to weight or poise, until the pointer vibrates equally on either side of the central mark. This scale, when built according to directions, will show a noticeable deflection of pointer *z*, when balanced, with an ounce or two in either pan, and a bit of paper weighing .01 gram is placed in either pan.

The various pieces of apparatus described, having been purchased, or completed according to directions, it is in order for the sand-lime man, the concrete block worker and the concrete user to make full tests of the sands he can command the use of, and to so grade, select and blend them that the densest possible material shall be used in his business. Future letters may give a full demonstration of the Lake Erie sand mentioned above, together with the deductions and findings obtained by an exhaustive grading and testing of all combinations of different grades leading toward the greatest possible density to be obtained in that manner.

The home-made apparatus above described has been supplemented by other appliances for molding bricks of model size, apparatus for hardening these sand-lime bricks without the aid of a boiler, and a working testing machine for determining the breaking strength and crushing strength of sand-lime. The testing machine may be built by an ordinary blacksmith from material to be found in his shop or in the country hardware store, and the machine, which stands 18" high on a 24"x12" floor space, will test either transverse, tensile or crushing up to 6,000 pounds.

The hardening apparatus will contain a number of model bricks, or one or two full-sized bricks, and may be started to work, and placed one side, where it will harden the contents in the most approved manner with no attention whatever, save to see that the gasoline flame does not go out through a deficiency of gasoline.

It will be the pleasure of the writer to present to the readers of ROCK PRODUCTS, from time to time, the data obtained by the use of the apparatus described above.

The Fargo Cornice and Cement Company, of Fargo, N. D., has been formed with a capital stock of \$75,000. The incorporators are George Rusk, M. E. Rusk, Axel Rosenberg, Axel Flatt and C. Given, all of Fargo.



# CEMENT

## An Epitome of the Situation.

"Early in the season we exerted every effort to get orders, now we are exerting the same amount of effort filling them," said the sales agent of a prominent cement company.

"Orders come much easier than they formerly did," is the way another prominent sales manager put it.

"We are having less difficulty than a month ago securing orders, and prices are ruling firmer," said another.

It would seem as if cement had reached its lowest level and that from now on prices will not only rule firmer, but will show an actual advance. Certain sections of the country have used just as much cement as ever before, and while other sections did not, there has not been such a falling off as one would imagine.

Some of the big companies are already making preparations to run their plants full time, but they are going to have the orders in sight before they do.

With the return of confidence, building operations all over the country are resuming a healthier tone.

The financial condition of the banks, according to eastern reports, is very satisfactory.

The two great political parties have chosen their standard bearers.

Everywhere we hear of factories of all kinds starting up and others taking on more help.

Lumber is advancing slowly but surely.

In fact, there is every indication that the tide has turned.

Buyers are more anxious to make contracts, and cement companies less anxious than a month ago. This is the surest indication of the change of feeling. Cement manufacturers are no longer trying to force the market, although they are using every legitimate argument to induce people to buy now.

Reports show that stocks held in warehouses are diminishing and that dealers are buying more liberally than for some time.

Many of the great projects held in check by the stringency are again being taken up.

Summarizing up the situation it can be said that the natural growth work has kept the market from becoming stagnant and that the return of confidence shows conditions improved everywhere.

## Record Breaking Times Ahead.

Although there have not been enough orders to keep in full operation the mills now in existence during the past few months there has scarcely been any let-up in the building of additional ones and the enlarging of others. This is a practical demonstration of the faith in a return of prosperity even greater than that which was depressed. People who have no faith in a return of good times would not be preparing for still greater business. Just what is likely to be produced in the way of record breaking times when the crest of the returning tide of prosperity strikes the country is even now a matter of speculation. The mills in existence before the depression were constantly breaking their records in production. What this record will be when all the new mills now building are put in operation, augmenting the established battery of record breakers, is a problem full of interest. In spite of all this the price of cement has held up remarkably well.

## Modernizing a Cuban Plant.

The Cuban government, since its establishment as a republic, independent of Spain, has created a considerable demand for Portland cement, it being used for piers and harbor improvements, public buildings and the building of roads, in addition to its use in commercial enterprises. The cement used is mostly American made, but a native product manufactured by El Almendares Fabrica de Cemento Portland of Havana, Cuba, is largely used by the government, practically the entire output.

El Almendares began operation originally about five years ago with an equipment of vertical kilns, and after running them for about two years with indifferent success, the plant was changed over to one using the rotary kilns. After considerable correspondence with American builders of cement machinery, with a view to doubling the two kiln plants then in use, the order for additional equipment was given to Allis-Chalmers Company of Milwaukee.



THE CEMENT PLANT OF EL ALMENDARES FABRICA DE CEMENTO PORTLAND, HAVANA, CUBA

The cement plant proper is located about eight miles from the center of the city of Havana on the banks of the Almendares River, about a half-mile from the ocean. The limestone used here for the manufacture of cement is quarried upon the river about a half-mile from the plant, where it is loaded on barges, poled down the stream to the plant, and unloaded by hand into mule-drawn carts, which convey the limestone up the hill to the first breaker, comprising a set of rolls. The limestone is of coral formation existing along practically the entire shore line of the island at the water's edge. It is very soft and full of moisture, and for that reason requires careful sorting to avoid many small pockets of foreign substance. The clay necessary for the cement process is a scarce material, and found in little pockets in the limestone. When one clay pocket is worked out, another one has to be opened up. The clay taken out is very wet and sticky, and after it is delivered to the plant, is rolled into balls about the size of watermelons and stacked up in sheds until ready for use, when it is spread upon a large cement floor in the sun and chopped to pieces with hoes to air dry it as much as possible. Then the clay is picked up on wheelbarrows, carried over to the dryer and dried.

The limestone, after passing through the rollers, drops immediately into a dryer with a fire box at the feed end and the stack at the discharge end, the reverse of the usual practice in this country. After leaving the dryer the limestone passes into a second dryer, after which it passes through ball mills and is mixed with the clay, the mixture being fed into small tube mills and carried over to two 6'x60' rotary kilns. The clinker is passed through revolving coolers and then spread out on a large cement floor roofed over for the purpose of ageing and further cooling. The aged clinker is carried in wheel barrows from this floor to the clinker grinding room, from which it passes to the stock house, the latter being provided with small bins, the contents of which is tested and approved before it is packed for the government of Cuba. The cement is packed in second-hand sugar barrels which are loaded on heavy drays drawn by mules or oxen, and teamed into the city over the eight miles intervening. There are no railroad facilities about the plant or vicinity; the coal and supplies are brought in from the ocean in barges which receive their cargoes in Havana Harbor and pass out again into the ocean and up the Almendares River to the plant.

The recently installed equipment includes a 1,000 horse-power compound condensing engine to replace two simple engines of a total of 500 horse-power, and the total quantity of steam used by this compound engine under full load will not exceed the amount used by the small engines for one-half that power by actual test. Coal costs about \$8 per ton. It is impossible to get into the plant anything longer than 60' kilns. Rotary coolers are substituted in place of the vertical cooler, and the coal burning equipment is arranged to draw the air blown into the kilns from the upper end of the coolers, heating it to about 400° Fahr. before it enters the kiln. The ball mills and tube mills are of standard size and a complete up-to-date electric equipment was included in the contract.

The capacity of the plant is doubled by the use of the machinery newly purchased.

During the latter part of the insurrection, the company did not dare send teams to the clay pit, as the "insurrectos" had closed in near enough to the city to steal the horses. The Cuban government established a block-house across the river overlooking

the cement plant, and placed a guard at the Paso de la Madama, which is a bridge across the river at the gate of the cement plant.

## The Meramec Portland Cement and Material Company.

On the invitation of the officers of the Meramec Portland Cement & Material Company, of St. Louis, an excursion was made recently to Sherman, Mo., by the stockholders and others interested in the company. A special train was provided for the occasion. As a representative of Rock Products was among the guests of the company, some interesting particulars can therefore be furnished concerning the visit.

It being the purpose of the company to develop facilities for utilizing the sand and gravel deposits of the Meramec River, which bounds the southern part of their land, before building the cement plant or engaging in the manufacture of lime, their attention has first been given to this department of their business.

Under the guidance of Frank P. Boyd, Vice-President and General Manager, the body of gentlemen on leaving the cars at Sherman were conducted across the company's tract to the Meramec River, on nearing which many of the machines and much of the material designed for use at the sand and gravel plant were in view, including the Lidgerwood Manufacturing Company's conveyors, Marris Machine Company's pumps and the Hayward Company's buckets, while at St. Louis waiting for the river to fall, there are six dredges on which considerable machinery will be brought forward.

The elevator facilities, conveying arrangements and storage bins are well under way and the piling along the river bank to act as an apron is nearly all driven in place. There is a large deposit of sand and gravel at this point in the river, exceeding forty feet, which is the limit at which it is expedient to pump the material. The company expects to complete this department by August.

A tramp across the open tract, which is to be the site of the cement plant, brought us to the foot of the hill where the lime rock will be quarried. Owing to the elevation of the ledges, it affords a gravity system of handling the raw materials, since later on when we came to view the deposits of shale, we found this material also at a similar elevation. Furthermore, there is an ample supply of both lime rock and shale to provide for the manufacture of a high grade of Portland cement, even if the plant was to be run at its full capacity (2,500 barrels daily) for a term of seventy-five years. Also it so happens there is very little stripping required. These facts have been ascertained by thorough inspection, and as to the quality of the materials, that has been demonstrated by practical tests by the highest authorities in expert knowledge of cement materials and manufacture.

The engineer of the cement plant is O. H. Sarody and the contractor for building it is the C. L. Gray Construction Company of St. Louis. This company is also erecting the sand and gravel plant.

The location of the works is at Sherman, on the Missouri Pacific railroad, about sixteen miles from St. Louis. Close at hand is the Frisco road, consequently the company will enjoy ample shipping facilities. The company's property comprises 260 acres. A St. Louis real estate company has purchased a tract adjoining the property and will proceed to erect homes for the use of the employees of the Meramec Portland Cement & Material Company. The new settlement will be known as Boyd City.

### Annual Clam Bake.

ALLENTOWN, PA., June 29.—The third annual clam bake of the Lehigh Portland Cement Company was held at Moser's grove, Neffs, on Saturday afternoon, consisting of the officers, heads of departments, foremen, clerks and guests to the number of eighty. Quite a number left Allentown on the 12:33 car for Slatington, meeting the men from the works at Levan's Junction. The grove was decorated with funny drawings, made by one of the drawing room staff.

At 2:30 a game of baseball was played between the Allentown team and the mill department team. The score was 15 to 5 in favor of the latter. On the ball field two large banners were erected, one to the east and one to the west of the home plate, with the words "Hospitality and Welcome" and "Amiability and Welcome." In the tug of war twenty-seven powerful men from the works against twenty-two men from the Young building, it was easy to guess the result. Every person wore a red silk badge printed with gold letters. The table under the pavilion was spread for guests and was arranged in a most tasteful manner. The food and refreshments, especially the clams, were all that could be desired and plenty for everyone. An appropriate program was handed to every person.

The following attended the clam bake: Geo. G. Sykes, Wm. H. Mann, Daniel E. Ritter, Raymond R. Bear, Joseph Barr, Wm. Montz, John Ball, Wm. H. Arthur, Geo. Moritz, Ed Shimer, Harvey O. Ritter, Geo. C. Kemmerer, Chas. O. Heffelfinger, Claude S. King, Herbert S. Lentz, Wm. Faust, Richard Ball, Wm. Ball, Harry Dickensied, Thomas Kuhns, Wm. Desch, John Schaffer, Chas. Schlicher, Ray Seislove, Harry Wetzel, Earl Heimple, Fred Butz, Theo. Shields, Herbert Wescoe, Wm. Weider, Ed Smith, Kramer Schatzline, Alvin Albright, Harold Hartzell, Frank Kelley, Ralph Piefer, Harold Schantz, Ray Bright, Ralph Mathews, Lewis Thomas, Wm. Shea, Dan O'Donnell, Michael Kennedy, Q. Smoyer, Oliver Schneek, Chas. Pfeifer, Ed Hutchenson, Geo. Roth, Chas. Mickley, Granville Rodgers, Robt. Laudenslager, Robt. Knerr, Wm. Frantz, Raymond Mosser, Agnew Kern, Moulton McPetridge, Carroll Hudders, Henry Reninger, Robt. Barr, Geo. Fullager, Geo. Specht, Chas. R. Rauch, Lewis Lent, Fred Balliet, John Hittle, Ralph Rinker, Fred A. Steward, Francis Schlosser, Frank Reilly, Henry Reichenbach, Lloyd Leeds, Percy Fenstermacher, Ray Brensinger, Joe DeLong. The guests were Judge Heydt, Col. H. C. Trexler, Edward M. Young.

### Short of Men.

IOLA, KAN., July 16.—J. A. Wheeler, secretary of the Iola Portland Cement Company of this city, stated this morning that the company was short on help and was anxious to employ additional men. More help is needed in the quarries and shipping room. He says that it is impossible for them to operate as much of the plant as they would like because of the shortage of help.

Mr. Wheeler attributes the shortage of labor at this time to the large number of Iola men who have gone to the harvest fields in western Kansas.

### Resuming Operations.

FENTON, MICH., July 16.—The Aetna Portland cement plant, which has been closed down for repairs, has started up again. They expect to operate full capacity.

The Egyptian Portland cement plant have about completed the repairs on their machinery and expect to start operations this month.

### Cement Company Organized.

CHATTANOOGA, TENN., July 16.—W. J. Oliver will be president of the \$6,000,000 Mobile Portland Cement & Coal Company, which was organized here. The company was chartered at Augusta, Me., and will start the erection of a plant at St. Stephens, Ala., on the Gulf of Mexico, to cost \$1,000,000, with an output of 3,000 barrels daily.

C. H. Treat, United States treasurer; W. W. Finley, president of the Southern Railway; E. L. Russell, vice-president of the Mobile & Ohio Railroad; Pat J. Lyons, mayor of Mobile, are among the directors.

### Contract Let.

PITTSBURG, PA., July 16.—The Crescent Building & Construction Company of Ellwood City, Pa., has secured the contract for putting up buildings and making other improvements at the plant of the Crescent Portland Cement Company at Wampum, Pa., along the Beaver River. The buildings will be of steel truss and concrete construction. Six buildings are provided for in the contract. Most of the buildings will be 150 by 100, but the stock room will be 500 by 70.

### Installs New System.

NEWAYGO, MICH., July 15.—The Newaygo Portland Cement Company has recently installed a battery of the machines for packing cement into bags known as the "Bates System," which has given universal satisfaction. By this system a greater degree of accuracy is reached in weighing, since each bag must balance 95 pounds of cast iron on a carefully made balance scale. When the weight has been reached, cement being fed through a one inch tube under pressure, the stream is cut off instantly, thus making each bag weigh exactly the required number of pounds. By the old method of packing, the work has been heavy and the room dusty; by the new system there is little or no dust and the greater part of the lifting of sacks is done away with, which improves general conditions materially. The system only requires one-half the number of hands to operate it.

The paper sacks used in the Bates System are of tough, all rope paper, and of much heavier material than those formerly used, as the paper can be very stiff from the fact that no tying is done. The bags have two ends or bottoms, and load in a car much more snugly than a tied bag—this prevents shifting and consequent breakage in transit. The cotton bags used in this system are tied by machinery and the knots are drawn more tightly than is possible by hand. It is an unheard of happening for a Bates cotton bag to untie in shipment.

To satisfy requirements as to sampling cement Mr. Bates has arranged a unique and effective sample catcher. At one of the four tubes is hung a granite iron bucket, into which a stream of cement about the size of a small sewing needle is thrown. This fills the bucket during the filling of a car of cement with a sample that must be absolutely composite and represents honestly what was shipped. Furthermore when the car is received, if the buyer wishes to sample each sack, a sampling tube is furnished which can be inserted through a valve and a quantity of cement taken without untying or mutilating the bags. All these points go to make a system that is not only complete and effective, but a great saving over the old methods.

### New Cement Rate in Texas.

AUSTIN, TEX., July 16.—The railroad commission has issued the following order: Cement in carloads, between Texas City and points on the International & Great Northern railroad, Missouri, Kansas & Texas railway of Texas and Gulf, Colorado & Santa Fe railway shall be made by adding 2 cents per 100 pounds to the rates applying between Houston and such International & Great Northern, Missouri, Kansas & Texas and Gulf, Colorado & Santa Fe points.

Rate of 6 cents between Galveston and Beaumont, provided in exception No. 6 to tariff, will not apply to or from Texas City.

This order shall take effect July 10, 1908, cancelling circular No. 2833, issued July 3, 1908.

### Will Enlarge the Plant.

LEEDS, ALA., July 15.—It would seem as if the promise made earlier in the season that the Standard Portland Cement Company would enlarge their plant is about to become a reality.

During the past week J. R. Hanahan, of Charleston, S. C., president of the company, Major Frederick H. Lewis, general manager and engineer, from Denver, and Draughtsman Seabrook and others from Hagerstown, Md., visited the plant. Arrivals of heavy timbers and new machinery would indicate that work would be commenced shortly.

The Bells Lake Portland Cement Company, Limited, has been chartered at Toronto, Canada, for \$450,000.

George R. Rother, formerly in charge of the Lehigh Portland Cement Company's plant at Allentown, Pa., has taken charge of the same company's plant at Belleville, Ont.

The Jones & Laughlin Steel Company is putting up a new plant at Aliquippa, Pa., and only recently completed one in connection with its South Side works.

The Knickerbocker Portland Cement Company of New York has been formed with a capital of \$10,000. The incorporators are J. Desbrow Baker, Yonkers, N. Y.; Thomas F. Barrett, 37 Wall Street, New York, and Arthur W. Britton, East Orange, N. J.

The proceedings of the Buffalo convention of the National Association of Cement Users has just come from the press and reflects great credit on the publishers. Copies can be secured from President R. L. Humphrey, Harrison Building, Philadelphia, Pa.

### In Lincoln Park, Chicago.

The Lincoln Park Commission, of Chicago, is just finishing two pieces of concrete work, neither of which has been done by contract, but all by day, under the direction of A. S. Lewis, the park engineer, and Superintendent West and his foremen. One of the jobs is the bridge over the lagoon, near the foot of Fullerton Avenue, and is the largest piece of work of the kind in Cook County. It has an arch 190 feet long. The bridge itself is 160 feet long and 65 feet wide, including foot-walks and driveways. The outside of the concrete structure is granite-faced, giving it the appearance of solid granite. The bridge cost \$50,000.

The other structure, now nearing completion, is a concrete boathouse that is perhaps the most unusual structure of its kind in the world. It is a concrete subterranean affair, to be covered with grass, flowers and shrubbery. To make the roof water-proof several heavy coatings of tar paper, with the tar poured over the same, have been used. The entire length of this structure, built close to the north end of the lagoon, is 280 feet. It is fifty feet wide and one-story high. The covering as well as the walls is concrete. Running in two rows the length of the structure are eighteen skylights, each 6 x 12 feet. Each skylight is covered with a concrete slab set in glass prisms. The entire top of the house will be covered with rich earth graded even with the prism-set slabs. The concrete walls will not be visible from the outside, as earth will be banked against them.

At the south end of the building is the entrance in a half circle facing the lagoon, and this half circle addition to the building will be used by the Lincoln Park Boat Club for clubrooms and lockers, the underground structure to be topped the same as the main building. In front of the circular entrance will be a grass plot facing the lagoon. The main building will be used as a storage place for canoes and shell boats of all kinds. The boats will be transported from the lagoon to the storage room by means of trucks made for the purpose.

Besides these two big structures the Park Commission has made use of the modern building material in various other ways. Park seats are molded, each in one piece, and so are drinking fountains. The facing is made of finely crushed granite. They were cast in wooden molds made in the park's big workshop.

### Recent New York Contracts.

Among the contracts recently secured by the Turner Construction Company, of 11 Broadway, is one for constructing all of the reinforced concrete stairs for the Manhattan approach to the new Blackwell's Island bridge. Work on this large undertaking will begin at once.

Another contract awarded this company is for the general construction of a four-story and basement stable, 63x98 feet in plan, for the Fleischmann Company, at Nos. 140, 142 and 144 Perry Street, New York City. The architect is Arthur M. Duncan, 15 William Street. The building will be of reinforced concrete throughout, while all of the floors throughout the structure and the entire basement will be water-proofed. Work on the contract is now in progress.

### Recent Philadelphia Contracts.

Oliver Randolph Parry, architect, 14 South Broad Street, has prepared sketches for a cement-block construction residence, to be erected at Glenside, Pa., containing a living hall, living room, dining room, kitchen, pantry and laundry on first floor; four bed rooms and bath room on second floor; maid's room, billiard and store rooms on third floor. The style of architecture will be English, with half timber gable effect. The same architect has prepared sketches and is receiving preliminary estimates from the Kennedy Construction Company and George W. Tipping for twenty-four houses to be erected along the line of the Reading Railroad in the vicinity of Glenside. He also has sketches for alterations and additions to the residence of Henry J. Stager at Willow Grove Pike, Glenside. The method of construction will be cement on metal or wood superstructure.

Reiter, Curtis & Hill have been awarded a contract said to be worth \$2,000,000 by the Delaware, Lackawanna & Western Railroad. The contract calls for the construction of a section of a cut-off from Lake Hopateong, N. J., to Slate Ford, in this State. The work requires the construction of more than 62,000 cubic yards of masonry, and about 2,000,000 cubic yards of grading will be necessary.

Cambridge Springs, Crawford County, will erect a city building of cement block. The facing of the block will be made of white silica sand brought from Illinois and white Portland cement, to which will be added a waterproofing filler. It is expected the result will be a white block closely resembling marble.



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the name  
Implies.



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Cement.

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(NEAR HAGERSTOWN)

QUALITY in every detail of manufacture.

QUALITY in our relation with architect, contractor  
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QUALITY in shipments—four railroads—Western Md.,  
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**MARYLAND PORTLAND CEMENT CO.**

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in practical construction work, extending  
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the utmost perfection of Universal Port-  
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**The BATES  
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The strongest and most perfect  
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Economical packing and smallest  
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**IT IS WATER PROOF!**

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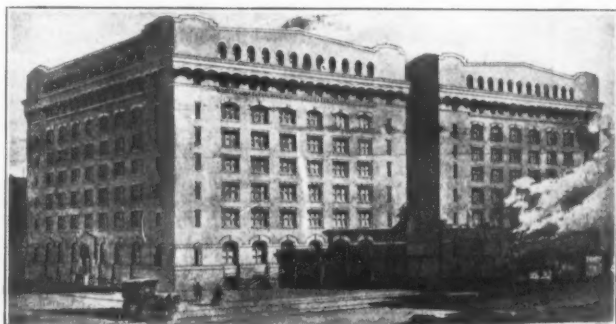
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Where strength and permanency are required there can be no mistake in specifying

### UTICA HYDRAULIC CEMENT

It has stood the test of time, and will endure for centuries.



Utica Cement is always uniform, being a natural product, its chemical combination never changes.

WAREHOUSES OF M. E. SMITH CO., OMAHA, NEBRASKA.  
(8,000 Barrels Utica Cement.)

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(10,000 Barrels Utica Cement.)

FACTORIES OF LIGGETT AND MYERS, ST. LOUIS, MISSOURI.  
(40,000 Barrels Utica Cement.)

These world famous structures built with Utica Cement exclusively for brick and stone laying mortar. There are thousands of others.

Durability is a quality of building materials that must be considered, and the well-tryed excellence of all the masonry work that has employed Utica Hydraulic Cement for the mortar are silent witnesses that bespeak continued patronage for the only goods that is backed by the record of past achievements.

Each of the following masons contributes an argument why the specifying architect or the careful builder should order Utica Hydraulic Cement exclusively.

**Because**—It is one of the oldest cements in America, having been on the market since 1838, and has an unbroken successful record of seventy years.

**Because**—It is strong. Its great binding strength makes a wall built with **Utica Cement** a homogeneous mass, the mortar getting harder with age, finally becomes harder than the brick or stone it cements together.

**Because**—It is eminently a bricklayers cement. It is plastic, and works cool and easy under the trowel, enabling the workman to spread the mortar uniformly and strike a neat, smooth joint.

**Because**—It is of a light buff color, and is stainless, it is especially adapted for use with Bedford stone and delicate tinted Brick. Where a special color effect is desired, same can be obtained by the use of the ordinary mortar colors without in any way effecting the strength of the cement.

**Because**—It is durable. Thousands of structures throughout the land stand to-day as monuments to the durability of **Utica Cement**.

**Because**—It is fireproof. Hydraulic cement has been known from the earliest times as among the most refractory of substances.

**Because**—It is economy to use **Utica Cement** for brick and stone mortar. One barrel of **Utica Cement** will lay 1000 brick, and in most localities it is as cheap as lime, and cheaper than cement tempered with lime.

**Because**—We aim by fair and courteous treatment, right prices, and prompt shipments to win the esteem and friendship of our customers. No order too large for us to handle, none too small to receive our closest attention.

**Because**—You will never have occasion to regret that you specified **Utica Cement**, it is the **BEST**.

**To Architects**—Always specify **Utica Cement** for bricklaying mortar because it is the best. Besides it is cheaper than substitutes.

OUR GUARANTEE GOES WITH EVERY BAG AND BARREL

## Utica Hydraulic Cement Company

Utica, Illinois

## Some Pointers on HYDRATED LIME

### TO OUR PATRONS:

**For Seven Years** we have watched with critical eye and unabated interest every step in the slow development of Hydrated Lime.

We fully realized from the start that it was necessarily an intricate, technical proposition, involving complex problems in both chemistry and mechanics, which it would take time, patience and perseverance to work out, and which we were perfectly willing to leave to the solution of chemists and experts.

It is extremely unfortunate for the industry that manufacturers less conservative than ourselves did not hesitate to rush in where chemists and experts feared to tread and flood the markets with numerous so called hydrates under various high-sounding names for which so much was promised and so little made good, that the trade cannot be blamed for its hostile attitude toward anything bearing the name.

Time and the actual experiences have amply justified our conservatism. Not until the discovery and development of the **Kritzer System or Vacuum Process** of hydration, which we were the first to adopt and try-out, and which made it possible to hydrate high calcium (double strength) lime was the problem practically solved.

Perfectly Hydrated High Calcium Lime is suitable for any and all purposes for which lump lime is used, and also for many other purposes wherein the use of wet lime putty is not practicable. In fact, new uses for high calcium hydrate are being constantly discovered as the industry is developed.

**On the all important point of economy**, it is true that no hydrate will yield quite as much mortar, pound for pound, as the lump lime from which it is made, but, on the other hand, it is true that the saving in cost of slaking lump lime by hand, in the old way, will offset this deficit, provided **high calcium Crown Hydrate is used**. Under present labor conditions it costs at least 25 cents per bbl. to slake and run off lump lime, all of which is saved by using Crown Hydrate, which is all prepared ready for use.

Furthermore, we guarantee that "Crown Hydrate" will go farther pound for pound than the best magnesian lime in the lump, and about twice as far as hydrated magnesian lime.

This is 1st, because the rock from which Crown Hydrate is made analyzes 98% pure carbonate of lime, against only 54% for the magnesian lime. 2nd, because of the perfect hydration which is impossible by the old mortar-box method, and 3rd, because of a more thorough and even "mix" of the powdered hydrate with the sand than is possible with wet lime putty, there are no fat or lean streaks in the mortar. And, finally it is absolutely impossible to slake lump lime as thoroughly and perfectly by hand as is now being done by the latest improved hydrating machinery. It is the same old question of "Man power against machine power"; in other words "Muscle vs. brain".

All the tests show that mortar from perfectly hydrated lime has a greater tensile strength and plastering done with it gets harder and takes a finer finish than that made from lump lime in the old way.

The average contractor being the conservative of conservatives, is, as a rule, not disturbed over the heavy losses suffered by the dealer on air slaked lime. It is, therefore, up to the dealer to join hands with the manufacturer to quietly establish Hydrated Lime in the market. It will be a slow process and require tact and judgment in handling. We are advising our patrons to "go slow" and feel their way carefully into it. You can order a little at a time in cars with lump lime, and gradually test your market, and work up a trade in High Calcium Hydrated Lime.

**There is absolutely no question about its keeping indefinitely without deterioration.** This makes the handling of it as safe and legitimate as is flour, salt or sugar. This refers to **Perfectly Hydrated High Calcium Lime** and not to any of the lower grade or magnesian hydrates.

**Our Crown Hydrate** is the product of high carbonate, crystallized limestone, analyzing 98% pure carbonate of lime, and is guaranteed to be just as superior to hydrated magnesian lime, as is our lump lime superior to any magnesian lump.

Send for circular "How to use Hydrated Lime" also for little booklet "**High Calcium Hydrated Lime in Portland Cement Mixtures**".

Respectfully soliciting your further inquiries and orders, which will have our best attention.

## Marblehead Lime Co.

**KANSAS CITY                      CHICAGO**

We are installing commercially successful  
hydrating plants.

**THE KRITZER CO.**

17th and Western Ave.  
CHICAGO



## Our Declaration <sup>to</sup> our Customers <sup>and</sup> their Customers



The same feeling of safety may be attached to the use of Whitehall during these low-priced times that has been your pleasure to enjoy in the prosperous times of the past.

### WE DECLARE

That WHITEHALL is not adulterated in any manner.  
That it contains no raw rock, cinders or ashes.  
That it is the same high quality that it has been in the past.



That if it were possible to improve the quality we would do so.

That it meets, in every respect, the Standard Specifications as adopted by the American Society of Civil Engineers, and that it does so with a good, substantial margin in our favor.

We want the trade of responsible and self-respecting dealers who know they are justified in their personal guaranty that WHITEHALL is right all the time, and is an especially high-grade Portland Cement.

**THE WHITEHALL PORTLAND CEMENT CO.**  
1722 Land Title Bldg. PHILADELPHIA, PA.

## BETTER WALLS



### "WHEELING" WALL PLASTER

Manufactured only by

**WHEELING WALL PLASTER CO.**  
Wheeling, W. Va.

#### Clothes May Make a Man

or a man may "make" himself in spite of his clothes.

But the walls of his home can't make themselves of any value to him unless he puts the right kind of clothes on them.

However well-built or costly they may be, the walls are no better than the plaster on them.

#### "Clothes" Do Make a Wall

and make the wall either worthy or worthless.

Poor plaster on the best of walls is just as sure to lessen their worth as good plaster on any wall will increase the value.

Write for a copy of "Better Walls," our handsome illustrated booklet which explains why WHEELING wall plaster is the best brand of wall "clothing" that's made, and why its use guarantees GOOD walls.

Tell 'em you saw it in ROCK PRODUCTS.



## STANDARDIZING MATERIALS.

## Annual Meeting of the American Society for Testing Materials.

The annual meeting of the American Society for Testing Materials was held at the Traymore Hotel, Atlantic City, June 23-27. The proceedings opened Tuesday afternoon with the regular business session, the Executive Committee's report showing that the society has had a steady growth and that the membership is now well over the thousand mark. After the treasurer had made his report, which showed that the affairs of the association were in excellent condition, the election of officers for the ensuing year was taken up.

The following were unanimously elected: Dr. Charles B. Dudley, president; Robert W. Lesley, vice-president; Prof. Edgar Marburg, James Christie and Prof. H. M. Howe, members of the executive committee.

About 125 members were in attendance at the first day's session, and this number was considerably augmented during the succeeding days' sessions. President Dudley's address, delivered Tuesday evening, took the form of a scientific dissertation on the subject, "Some Features of the Present Steel Rail Question." He handled the matter in a masterly manner and this paper is likely to become a classic on the subject.

Another important paper was that of Dr. A. S. Cushman of the Agricultural Department, Washington, on "Electrolysis and Corrosion." He accompanied the contribution with many experiments and actual specimens illustrating his position.

Wednesday was devoted to the discussion of subjects pertinent to the steel and iron industry.

Thursday the society turned its attention to the subject of cement and concrete. Vice-President Robert W. Lesley presided at these sessions, Dr. Edgar Marburg of the University of Pennsylvania acting as secretary.

Committee C made the first report on "Standard Specifications for Cement." Various changes in the present specifications were suggested and adopted. Most of them are merely changes in the wording of the matter, making the subject more clear than before. A vote of thanks was tendered the committee.

The report of Committee I on reinforced concrete was also presented at this session. The report briefly stated that they would be unable to make their complete report until the next annual meeting, as they were not able to gather all the data necessary from which they hoped to make a condensed report. The joint committee has been cooperating with the United States Geological Survey in the investigation of concrete and reinforced concrete, and the results of these tests are being published.

H. S. Spackman and Robert W. Lesley presented a paper entitled "Sands—Their Relation to Mortar and Concrete." Mr. Spackman stated that it had been found that some cement that would not harden with one sand would do so with another. It was not fair, he said, to call on the American manufacturer to meet specifications which did not make provision for this. He said that the society should formulate some intelligent method of testing sand. The paper excited considerable discussion and was decidedly one of the best presented.

Sanford E. Thompson, M. Am. Soc. C. E., Newton Highland, Mass., read a paper on "Permeability Tests of Concrete with the Addition of Hydrated Lime." He has made a number of tests to determine the effect of adding various percentages of high calcium hydrated lime to concrete of different proportions.

The specimens were made larger than customary in permeability tests, but the proportions were the same except that a slight excess of sand was taken in proportion to the stone to insure homogeneous specimens, thus avoiding the possibility of stone pockets, which are more liable to occur in small size specimens than in actual construction. The following conclusions were drawn as to the result of the experiment:

1. Hydrated lime increases the watertightness of concrete.

2. Effective proportions of hydrated lime for watertight concrete were found to be as follows:

One part Portland cement, 2 parts sand, 4 parts stone; add 8 per cent hydrated lime.

One part Portland cement, 2½ parts sand, 4½ parts stone; add 12 per cent hydrated lime.

One part Portland cement, 3 parts sand, 5 parts stone; add 16 per cent hydrated lime.

These percentages are based on the weight of dry hydrated lime to the weight of the dry Portland cement.

3. The cost of large waterproof concrete structures may be frequently reduced by employing leaner proportions of concrete with hydrated lime admixtures, and small structures, such as tanks, may be made more watertight.

4. Lime paste made from a given weight of hydrated lime occupies about 2¼ times the bulk of paste made from the same weight of Portland cement, and is therefore very efficient and void-filling.

Prof. Richard K. Meade, chemist of the Dexter Portland Cement Company, contributed interesting data on the subject, "Influence of Fine Grinding on the Physical Properties of Portland Cement." A few extracts from his paper follow:

Fine grinding to some extent helps the soundness of cement, but half the energy expended upon the grinding of raw material would be much more sure of producing the same results.

The influence of fineness upon the rate of set of cement is in some instances quite marked and in others less noticeable.

As to the effect of fine grinding upon tensile strength, a number of experiments had shown that neat strength is lowered by finer grinding, and that the sand strength is increased by finer grinding.

Prof. H. C. Berry of the Engineering Department of the University of Pennsylvania gave a paper on "Tests of Concrete Beams Under Off-Repeated Loading." He not only evolved new and unique methods for testing beams, but made the startling declaration that a million loadings will not decrease the ultimate strength of a concrete beam.

W. W. Maclay of Detroit made a plea for the harmonizing of standards to prevent friction between the manufacturer and consumer in his interesting paper entitled "Standards for Portland Cement, Especially for the Tensile Strength." After presenting many facts and reasons in support of his views, he said that it would seem as if we were nearing the time when the present multiple standards for strength could be reduced and simplified with great advantage. He did not expect that his views in favor of a single standard for strength would be immediately popular, owing to the present system and the many theories and beliefs that have grown up around it.

At the Thursday evening session many of the papers were read to the society owing to the absence of the authors. Among those presented were the following:

"Formulas for Reinforced Concrete Beams in the Light of Experimental Data," by W. F. Scott.

"Shearing Values of Stone and Concrete," by Henry H. Quimby, M. Am. Soc. C. E., Engineer of Bridges, Bureau of Surveys, Philadelphia.

"Laboratory Work for the Philadelphia Subway and Elevated Railways," by Samuel A. Brown of Philadelphia.

"Tests of Bond in Reinforced Concrete Beams," by M. O. Withey of Madison, Wis.

"Testing and Inspection," by W. A. Aiken, M. Am. Soc. C. E., a member of the well-known firm of Henry S. Spackman Engineering Company of Philadelphia, was presented during a meeting held previous to the cement and concrete sessions. The last paper of the session was that of J. Y. Jewett of the Reclamation Service, on the subject, "Influence of Alkali Water on Concrete."

The Friday sessions were given up to preservative coating and lubricant propositions and papers on testing machines and apparatus.

An interesting discussion developed at the morning session on the subject, "Will Pure Paint Legislation Give Us Better Paints?" in which C. D. Rinald, C. B. Dudley, E. F. Ladd, C. B. Heckel, J. Dewar, J. Peters and A. Somers participated.

At the annual dinner, held in the large dining-room of the Traymore, Willard Smith of Chicago presided, and interesting addresses were made by President Dudley, Vice-President Lesley, Mr. Cheesman, Mr. Hunt and Mr. Thompson.

At the Saturday session miscellaneous papers on the Forest Service of the United States were presented and the committee reports on the subject of fireproofing and waterproofing materials were read.

This committee is known as Committee P, and Prof. Ira H. Woolson is the chairman and R. P. Miller is the secretary.

They recommended some changes or alterations to the "standard test," and also proposed a new standard test for fireproof partition construction.

## Nearing Completion.

WASHINGTON, D. C., July 20.—One of the largest concrete bridges is nearing completion at Washington. Connecting Connecticut Boulevard, one of Washington's most fashionable drives, over Rock Creek Valley, this wonderful bridge is already regarded as a celebrated example of the utility of concrete.

Constructed of molded concrete blocks and monolithic concrete masonry, it is dependent upon itself for support, having no steel framing for reinforcement. At its highest point the bridge is 150 feet above the bed of the ravine, and its total length with the approaches is 1,400 feet. Congress appropriated \$850,000 for the construction of the bridge proper.

## Record Time Construction.

PHILADELPHIA, PA., July 20.—Work on the Walnut Lane Bridge across Wissahickon Creek has so far advanced that the forms and falsework have been taken down, displaying the real work to the general public for the first time. It is expected that the bridge will be open to the public in August. Work was started on the bridge two years ago and a time record has been made in its construction. Riley & Riddle are the contractors. The bridge is 585 feet long and 65 feet wide. The approach arches span 53 feet. There are three arches on the west side and two on the east.

## Bridge Contract Awarded.

NORFOLK, VA., July 16.—J. W. Davis, of Newport News, has been awarded the contract by the Board of Control of the city of Norfolk for the erection of a concrete bridge across Jackson Park and connecting Holt Street and Lovitt Avenue. The bridge will cost \$6,700 and work will begin in a few weeks and be pushed as rapidly as possible.

## Built in Two Weeks.

RIDGEWAY, PA., July 15.—William Dickinson, one of the leading concrete engineers in this section, has made a record in concrete bridge construction. The bridge spans Silver Creek at the foot of the winding hill road known as "The Double S." Mr. Dickinson was awarded the contract by the supervisors of Ridgeway township and the bridge was thrown open to travel just two weeks from the day he broke ground for the work. The roadway of the bridge is 13 feet and 4 inches wide, with 3-foot curved guard rail, making the entrance to the bridge a width of 18 feet. The total length of the bridge over all is 30 feet. The opening under the bridge for the stream is 20x5½ feet, the bottom of the bridge being 5½ feet above the bed of the stream. The bridge is of the concrete girder style, reinforced with twisted steel rods. There was a saving to the township of \$200 between the price of this bridge and a steel bridge with stone abutments. It will be probably a month yet before the false work on which the bridge was erected will be taken out.

## Will Use Concrete Piles.

H. M. North, engineer of construction for the Cleveland Short Line Railroad Company, a branch of the Lake Shore & Michigan Southern Railway, has awarded the Raymond Concrete Pile Company, of New York and Chicago, the contract for the concrete piles to be placed in connection with the foundation for the proposed bridge at the intersection of the Cleveland Short Line Railway and Independence Road, near Cleveland, O. This contract is the result of satisfactory work done by this company in connection with placing the concrete piles for the Cuyahoga Viaduct, last season. The same company has been awarded its fifth contract for concrete piles at the Immigrant Station, Ellis Island, N. Y. It calls for the placing of Raymond concrete piles under two measles wards, two isolation wards and one office building for the Department of Commerce and Labor, Immigration Bureau, Ellis Island and New York Harbor. The contractors are the North-Eastern Construction Company, under the supervision of Alfred Brooks Fry, superintendent of the U. S. Public Buildings, and Frank S. Howell, civil engineer, U. S. Immigrant Service.

## First Annual Architectural Exposition.

The first annual national Architectural Exposition will be held during the week of September 14 to 19 at Madison Square Garden, New York City. By the combination and cooperation of all departments in architecture, engineering, painting, sculpture, the trades, manufacturing and craftsmanship pertaining to the construction, equipment and decoration of buildings as well as landscape and garden effects, this, it is stated, will be a radical departure from the usual form of exhibitions. The cement section will contain the largest collection of exhibits ever seen in New York City.



## EXQUISITE ART EXPRESSION IN CONCRETE.

[Continued from page 3.]

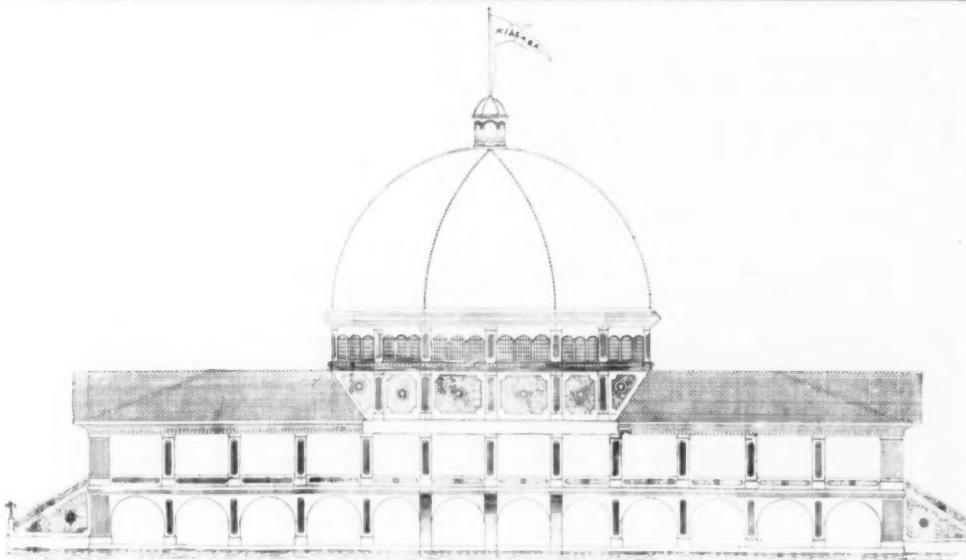
way the general idea of park buildings that has been developed by several international expositions, each one of the buildings shown is a distinct departure from any stereotyped style. The lines are bold, graceful and pleasing; and while they are very ornamental, which is highly essential in buildings of this character, yet the utility of the structure has been uppermost in the minds of the designer. Each building is distinct in character and especially adapted to its specific requirements.

Work is progressing rapidly on the mammoth enterprise, and it is expected that nearly all of the buildings will be completed before the end of the present season. It is the purpose of the management to throw open the doors of Hofmann's Niagara Park next summer. A small army of men are now employed regularly, and the work is being pushed as rapidly as possible. Extreme care is being exercised in each and every engineering calculation, and when the structures are completed they will be perfect in every detail. Only the highest grade of concrete and reinforcing material is being used, and the best skilled workmen obtainable are employed. In fact, no expense is being spared in any direction. When completed this great park will stand as a monument for all time to the genius of its builder and designer.

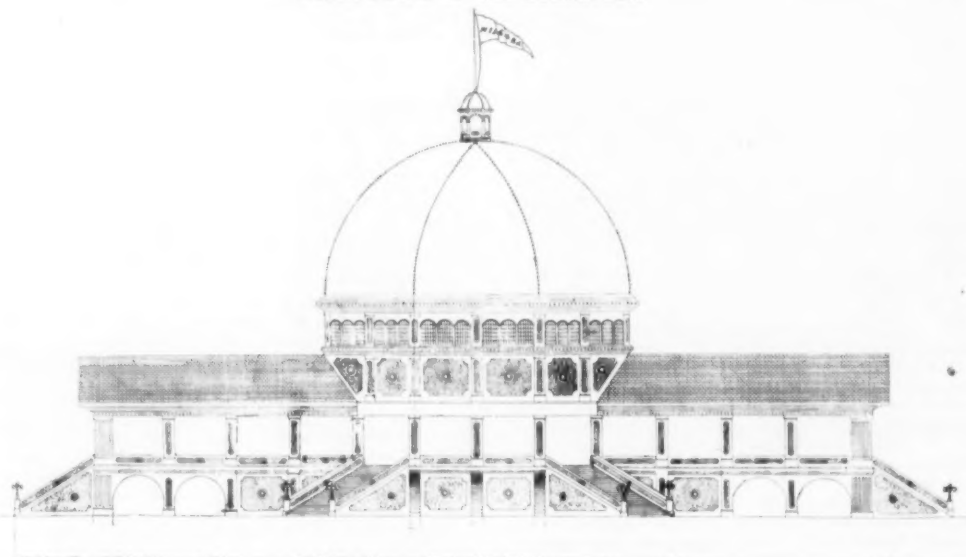
No detail looking toward the safety of the thousands who will fill these great buildings has been overlooked. They will stand as models for this class of design and construction for years to come. Of course there are not many cities that can support an amusement institution planned on such an elaborate and expensive scale. As stated before, the park proper contains about thirty acres of land, and the cost of the buildings alone will run considerably over a quarter million dollars.

The dam across the Desplaines River is shown herewith. It is 292 feet in width and built entirely of concrete, costing \$60,000. On the park side is shown the power-house, now nearing completion. Here the harnessed water will be converted into power.

This water-tower and power-house, a detailed drawing of which is shown, is 120 feet high and 37 feet square. A turbine wheel and pump will be located at the water line and the power generated will be used in the operation of all the machinery, as well as furnishing the lights for the entire plant. A water tank will be located in the top of this building, the roof of which will be used as an observatory. Elevators will convey visitors to the top. The intervening floors will contain the machinery for generating and transmitting the power and light. The power-house will be brilliantly lighted on the exterior with thousands of electric lights studded all over the con-



WATER FRONT OF THE BOATHOUSE.



LAND FRONT OF THE BOATHOUSE.

crete surface. The exterior of all the buildings will be illuminated in a similar manner.

In constructing the walls of the buildings one method of reinforcing is carried out in all of them. Every twelve inches there are placed vertically  $\frac{3}{4}$ -inch steel rods, while horizontally the same size rods are placed every six inches. These are wired together with heavy galvanized wire. The forms are built around these, the steel rods projecting from the top of the last form as shown in the photograph, thus forming an interlocking connection. The concrete is poured into the forms and thoroughly puddled so that there are no voids.

The floors are also made of concrete, reinforced as follows: First  $\frac{3}{4}$ -inch rods are placed six inches apart, to which is fastened expanded metal, and across which  $\frac{3}{4}$ -inch rods are again laid at right angles. Mr. Sauber says that a floor made in this manner will stand all the weight that could possibly be put on it in this character of building; in fact, it would be amply strong for a warehouse where pig-iron was stored.

The method of constructing the domes and vaulted roofs of the buildings is worthy of mention. First the false work is built up inside, and from the center of the dome rods are carried to the point where it joins the building. These are  $\frac{3}{4}$ -inch steel rods and are placed six inches apart; over this is fastened the expanded metal, and then at intervals of six inches  $\frac{3}{4}$ -inch rods are placed horizontally. The vaulted roofs are constructed in a similar manner.

The domes and roofs have not a single truss or support of any kind. Expansion joints filled with waterproof felt are provided at correct intervals in the domes and roofs. Where expansion joints are provided in the walls they are placed between the ornamental panels, making a joint similar to that observed in stone construction.

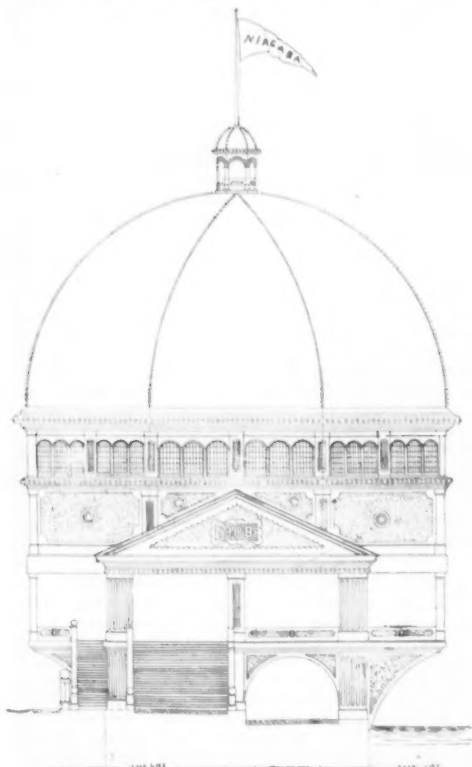
The foundations of all the buildings go down to bed-rock, which varies from fourteen to sixteen feet in depth in various parts of the grounds. This ob-

viates the necessity for piling and makes a foundation which will stand any possible strain.

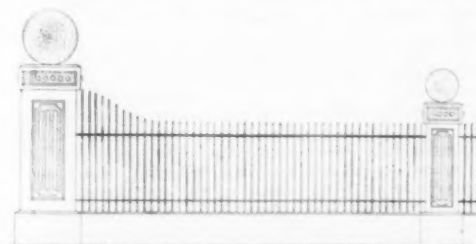
One part Portland cement, three parts sand and five parts crushed limestone is the proportion observed in the mixing of the concrete. A Smith mixer is used and the concrete conveyed by means of wheelbarrows and elevators. Atlas Portland cement and Chicago AA are being employed. Mr. Sauber does not use any other ingredients in his mix than what is mentioned above.

The artistic exterior and interior effects are secured by rubbing with sandstone until the concrete surfaces are smooth and have the appearance of cut stone. Where a rough surface is desired the concrete is bush-hammered. This artistic treatment of surfaces is done as fast as the centering is removed. This work constitutes one of the most remarkable features of these buildings. Each will have a different character of surface, and the designs, while simple, lend an individuality which is striking.

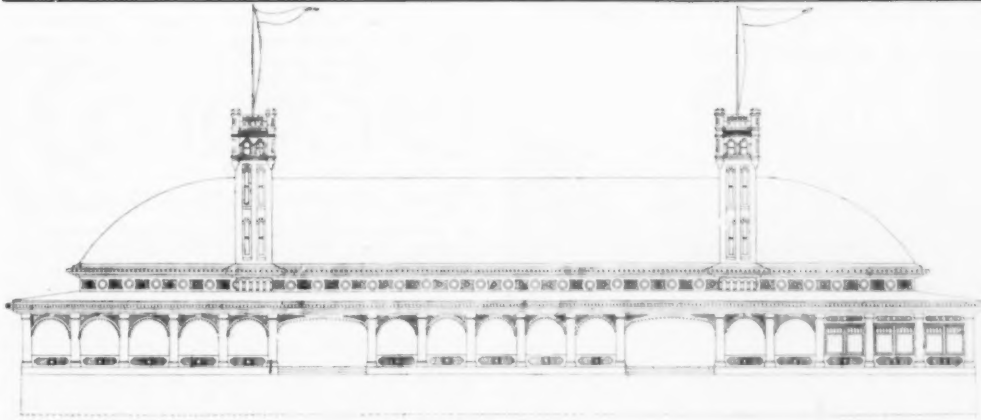
The same treatment is to be carried out in finishing the interior, whereby wonderfully artistic and original effects can be secured. The under side of all domes and the vaulted ceilings will also be decorated in a similar manner. Where the plain concrete surfaces are rubbed as described with sandstone



SIDE ELEVATION OF BOATHOUSE, SHOWING THE OVERHANGS.



CORNER SECTION OF THE FENCE.



THE DANCING PAVILION.

blocks all traces of the marks made by the wooden mold boards are removed. There is a decided contrast in color between the rubbed and the hammered surfaces, the rubbed surfaces being of a markedly lighter shade.

By this method one of the greatest objections to concrete construction where beauty is a consideration is removed, and no one can complain of the lack of

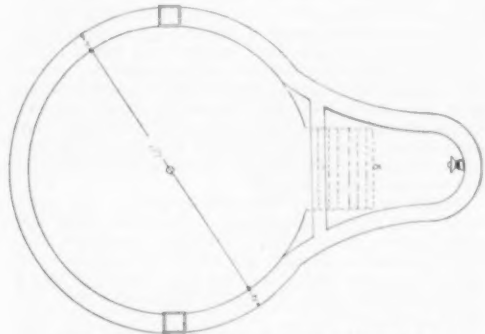
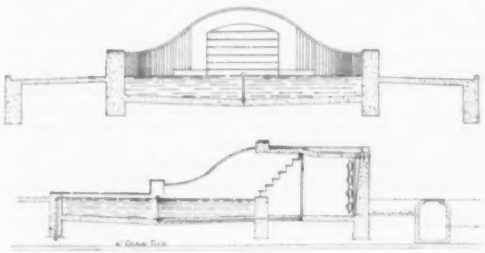
artistic effect. The surfaces of all the buildings, and in fact the surfaces of every bit of concrete visible, will be treated in some special manner. All evidences of the forms will be removed and all angles and corners pointed up.

The river above the dam is being dredged for several miles and considerably widened. This body of water will be used for boating and small pleasure craft of every character.

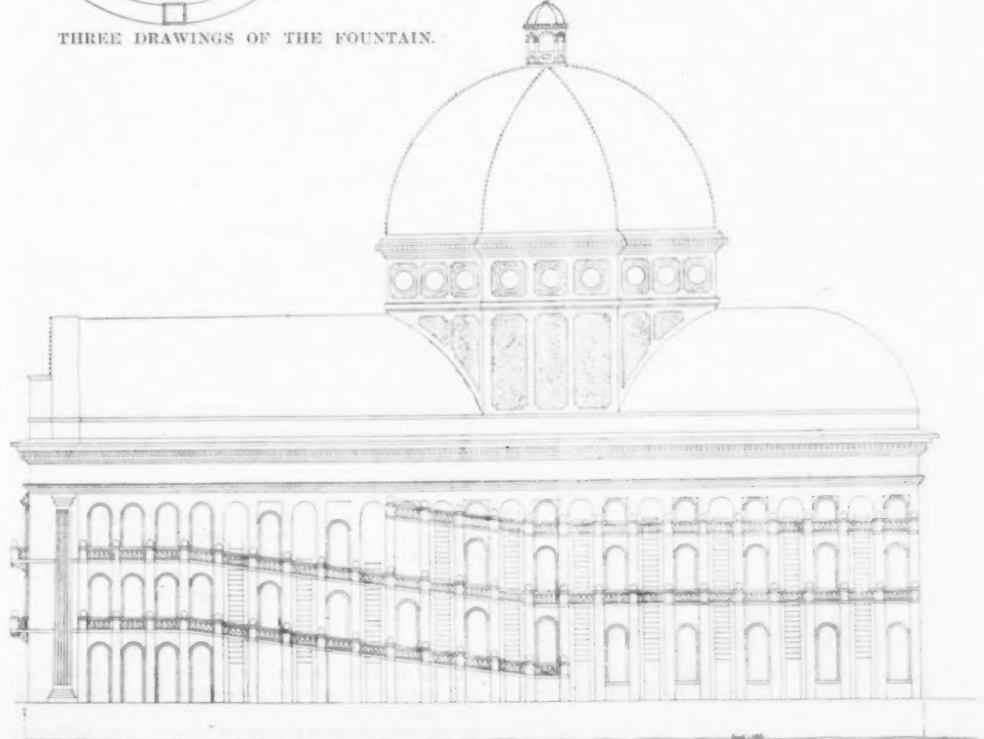
The boathouse will stand beside the river just above the power-house. Three views of this are shown. First, the Barry Point view, or the land side, Barry Point being the name of the road running parallel with the river. The second view is from the north end and shows how this immense structure will overhang the water fifteen feet. The third view is from the river front. The boathouse will be 211 feet long, 50 feet wide, with an 80-foot-diameter dome 105 feet high.

We also print a view of the subway under Joliet Avenue, 10 feet wide and 8 feet high, also a north end view of the tunnel under Barry Point Road. In the latter picture the power-house is shown under construction. The treatment of the concrete surfaces is also shown, the panels and the ornamental balls being bush-hammered, making a very artistic effect and relieving the usual monotony of the concrete surfaces, which has always been objectionable. The tunnel will lead over into another part of the park.

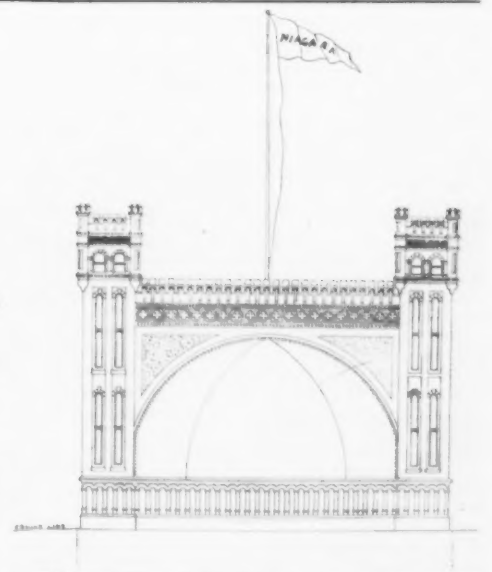
A section of the fence which will serve to inclose the park is also shown. It will consist of 4½-foot iron pickets on an 18-inch concrete curb. The paneled posts will be seven feet high, studded with sixteen



THREE DRAWINGS OF THE FOUNTAIN.



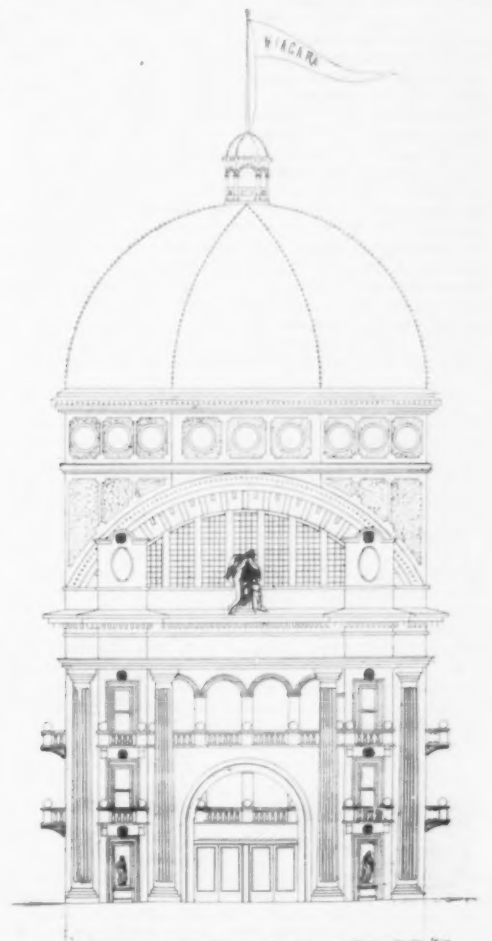
THE THEATER, SHOWING PIAZZAS AND FIRE ESCAPES.



THE BAND STAND, WITH CONCRETE SOUNDING BOARD.

incandescent lamps in each post. The entrance posts will be twelve feet in height, provided with turnstile gates, all of concrete.

The largest building of all is the theater, which is to be 200 feet long and 90 feet wide. It will have a dome 110 feet high without a truss. The theater will have three stories, with outside verandas at each floor four feet wide, connecting with the ground by fire-escapes. The floors are all to be reinforced concrete, so that the theater will be as nearly fireproof as it is possible to build it. This building marks an epoch in theater-building, being the highest type of fireproof construction, besides possessing acoustic qualities which will no doubt make it unique. Standing free from all obstructing buildings, it has a large number of windows, each of which is the same as a door, opening easily on hinges from the inside, it will be without doubt the safest theater building in



GRAND ENTRANCE TO THEATER.



the world. Mr. Sauber is justly proud of this structure, combining as it does all the essential features sought for in a perfect theater building. It will no doubt serve as a model for theater structures for some time to come.

The dancing pavilion is to be 170 feet long and 79 feet wide, surrounded by a 20-foot promenade. It will be surmounted by four ornamental towers brilliantly lighted. The arched dome will be built without trusses, and in one end of the hall will be a raised stage with a concrete sounding board. It will be one of the largest buildings of its kind in the world and is patterned after the famous Tabernacle at Salt Lake City. Dressing rooms and toilet rooms and a balcony for spectators will be features of the pavilion.

The refectory and cafe will be 200 feet long, 55 feet wide and 105 feet to the top of the dome in the center, which will be 80 feet in circumference at the base. This will be one of the most ornate structures on the grounds and will also have a subway entrance which is quite a novelty. The entrance to the subway will be surmounted by twin towers.

The band-stand will be a novelty. It will be 60 feet wide and 40 feet deep, with towers on either side 45 feet in height. The sounding board in this stand will be of concrete.

One of the unique ornamental features of the park is the fountain, drawn in the shape of a pear. There will be seven steps of colored glass lighted from underneath. The fountain will empty into a lily pond.

The electric light poles are being made of concrete and will be very ornamental.

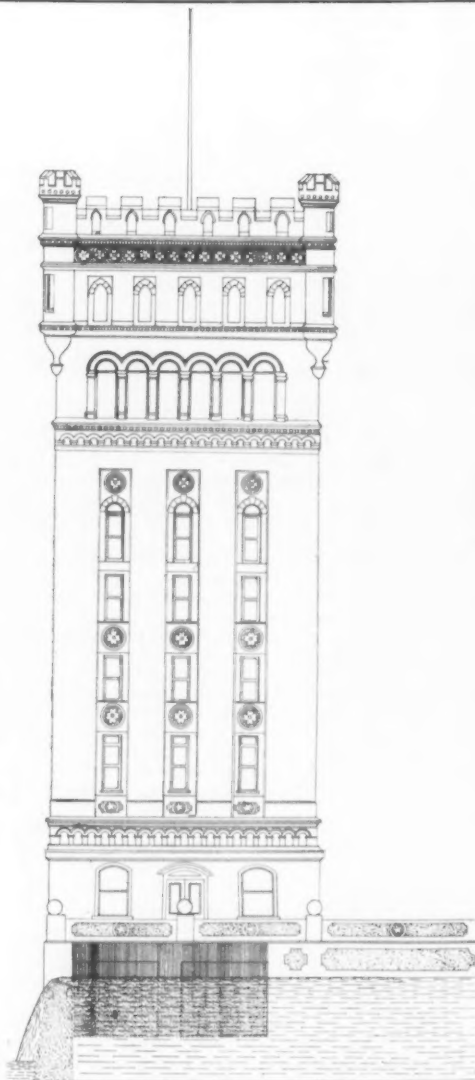
To sum up the whole impression that one gets by a visit to this veritable wonderland in company with Mr. Hofmann and Mr. Sauber, where an army of concrete workers are as busy as so many bees, all working on different portions of the great undertaking, one must call up the remembrance of youthful fairy tales in which magicians called into being stupendous glories beyond description by waving their magic wands. It is a dream of perfection and high art expressed in concrete, the first properly adaptable building material of all the ages, and hereby is its exquisite beauty of finish developed to crown in completeness the whole study of the entrancing subject.

### Favors Concrete Pipes.

Having extensively investigated the land and water conditions of southeastern Colorado, with special reference to the Arkansas valley, Franklin P. Summers of Los Angeles yesterday made the statement that he saw no reason why Colorado should not be as great an agricultural state as any in the Union. He favors the laying of concrete pipes in the fields to take the place of the irrigation ditches, maintaining that enough water is lost through evaporation in the open ditch systems to irrigate all of the land now under cultivation in southeastern Colorado.

"In parts of Kansas and in California," said Mr. Summers, "the concrete irrigation pipes are used in the fields and are effective. The expense is something, but the results are something also. Concrete is cheaper than it was a few years ago and can now be used by the ranchers to an advantage, for it appears to me that it is better to go to the expense, though it is pretty heavy, and have good crops than to go to less expense and not have any."

"The concrete pipes protect the water from evaporation, do not tear up the field and allow more acreage



WATER TOWER, POWER HOUSE AND OBSERVATORY.

for raising crops. Three years ago in California I purchased the ranch of a man who had failed because of inability to get water. The concrete pipes were then just coming into use in a few places, but I could see no other way to make that ranch pay. I put in the concrete laterals and as a result had enough water all during the summer.

"It is astonishing how rapidly the water evaporates even from the rivers and the reservoirs, but it goes much more rapidly in the irrigation ditches. Many a farmer has sufficient water rights to irrigate lands larger in extent than he is trying to raise crops on if he only knew how to preserve his water."

"In some sections of the country I found the farmers discouraged because of the lack of water. I have no concrete pipes to sell and have no friends who are selling them, but I recommend that they be put in, especially on some ranches. I came to Colorado with the view of investing in ranch land, and I shall irrigate my lands with the concrete laterals if I secure what seems to be insufficient water rights."

"It seems strange that in a locality where water is held at such a high value that it should be wasted. I found farms in Kansas that were furnished with the underground pipes and the water was secured by pumping plants, and the owners did not have a single water right from any company."

### Concrete Streets are Coming.

ALLENTOWN, PA., July 20.—The first concrete street paving has been laid in Allentown. Its location is on Allen street, between Fifth and Sixth, along the properties of T. F. Heaney, Joseph H. Koehler and Wm. E. Erdell, 138 feet long by 36 feet wide. It was put down July 13, 14 and 15, three days' work with twenty men, by the Lehigh Granolithic Street Paving Company, of Allentown, J. A. Schaeffer, manager.

The street was dug out five inches and then rolled with a six-ton roller, which rolled it down one inch further.

A five-inch base of concrete was put down of one part of Penn-Allen Portland cement and seven parts of crushed stone, hand mixed and thoroughly tamped, so that the water came on top. The concrete was fairly wet. One-inch topping or wearing surface was put on in from one to six hours after the base was put down, which was made of one part of Penn-Allen cement and two parts of ground granite. This granite sand was furnished by the Walker Granite Company, of Siesholtville. The granite is exceedingly hard, of a fineness of one-quarter inch down. The topping was also hand mixed and quite wet. It was simply leveled with the proper pitch of the street and then floated. As this would have left the surface too smooth, it was roughened after being put down with a coarse reed brush.

The expansion is taken care of by a three-quarter-inch expansion joint on both sides of the street against the curb. The joint was made by placing a three-quarter-inch surfaced board against the curb and the concrete deposited against the board. The board was removed before the concrete had set. After the concrete was set and the board was removed the joint was filled with four inches of sand and two inches of pitch. One expansion joint was put cross-ways in the street at one-half the distance, or 79 feet from the end. This was put down in the same way as the joint along the curb.

Particular attention was paid to joining one day's work with the previous days. The lower base was joined with a joint of one to two sand mixtures. The topping was cut straight down each evening so as to make it a straight joint for the following day's work. The joints are so perfect that one cannot tell where they are.

Water will be put on the street daily and no traffic allowed on the same for a week.

The cost of the work is \$1.40 per square yard.

Permission to lay this paving was granted by city councils under the supervision of the city engineer, Wm. E. Erdell is not going into the paving business, but wants to demonstrate that cement, the output of the chief industry in this region, is valuable for the paving of highways.

### Only Took Ten Days.

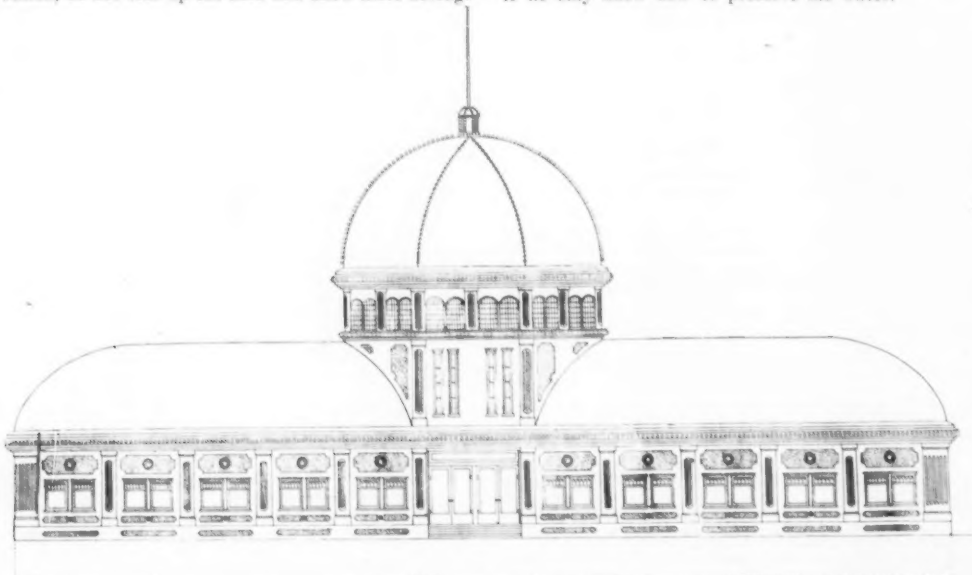
SNYDER, OKLA., July 20.—What is supposed to be the largest piece of concrete work constructed by any town in southwest Oklahoma without any cost is the big concrete dam across Otter Creek, a running stream at Snyder. Farmers hauled the material and the citizens of Snyder—bankers, merchants, lawyers—did the work. The estimated cost of the dam is \$1,500 and it was constructed in ten days. Dinner each day was furnished by the merchants and livery rigs hauled the workers back and forth.

### Concrete School House at Latrobe.

ALTOONA, PA., July 16.—The Altoona Concrete Construction & Supply Company have been awarded the contract for the erection of a public school building at Latrobe. The contract price is \$28,000 and work will be started on it at once.

### Concrete Floors in School.

GRAND RAPIDS, MICH., July 15.—The business committee of the Board of Education has decided upon the Kahn system of reinforced concrete for the floors of the new Turner Street School and the contractor will be required to use this system.



THE MONSTER REFECTORY.

# Concrete

## High Class Block Work.

The handsome residence illustrated on this page was recently completed by the Perry County Hollow Wall and Concrete Construction Company of Du Quoin, Ill., for Dr. R. D. Pope of that city. This concern has been in the concrete block manufacturing and contracting business for several years and have a large number of private residences as well as business buildings and warehouses to their credit. They believe in quality, and have worked up an enviable reputation in the locality where they operate and established a name for concrete construction besides a profitable business for themselves.

The portico and porch columns are all of concrete, cast in molds provided by the Simpson Cement Mold Company, of Columbus, Ohio, who have achieved a gratifying success in this specialty in concrete construction. No concrete block or contracting establishment is complete without a full outfit of these molds, which enable the contractor to put the touch of completeness to concrete block buildings by means of the decorative columns, caps, and ornaments which the architect has long been accustomed to use, and which no building is finished without.

The Perry County Hollow Wall and Concrete Construction Company maintain a drafting department where each elevation of the building is carefully drawn out and proper embellishments selected. Contractors in and manufacturers of concrete commodities who study the business like this concern has, will find a constantly growing, lucrative business. It is a pity that there are not a much larger number of such intelligent and capable contractors and manufacturers in this branch of the concrete industry. There are a whole lot of good manufacturers and contractors in various parts of the country who have had to overcome the bad reputation that was made in the early days of the concrete block, and it has been a hard row for them to hoe, but after it is once established and in the hands of the right people, the concrete block is all and even more than has ever been claimed for it as a simple, economical and extremely high grade building material, adaptable for almost every conceivable structural purpose.

## A Basement Bath Tub.

BY HAMAN GLOCK.

Recently the owner of a residence obtained prices for a basement bath tub, 4 feet wide, 3 feet 8 inches deep and twelve feet long, in which concrete cost less than half of that of any other material, enamel tile being the next lowest.

This tub is built as shown in the drawing, the concrete made of one part Portland cement to two parts sand, reinforced with 2-inch mesh wire netting, No. 10 galvanized wize, and a 1/4-inch rod at top as shown.

The tub is rectangular, with round corners. The hot and cold water supply spigots, being above the tub, are omitted from the drawing. The waste water pipe is 2-inch diameter and enters an 8-inch vertical (round) opening nearly 4 feet deep which was molded in the concrete by use of a wood form, the sewer connecting at its bottom, which enables cleaning the sewer trap with ease.

The overflow pipe is galvanized iron, discharging the surplus water into the sewer through a perforated metal cover at the floor level.

A smooth surface or finish for the concrete was obtained by rubbing the surface with pumice stone and Scotch hone after the tub was three weeks old, and when dry given two coats of Demar finest varnish, which is proving to be entirely waterproof, as it has been filled with 3 feet 3 inches of water and retained same without waste for forty-eight hours.

The white varnish makes a smooth enamel surface. It did not change the original color of the concrete, which, made of Portland cement and white sand, is of a very light blue cast.

The surroundings were such as to prevent a full-view photograph, or same would have been shown here.

The extension of this idea carries the suggestion of the practicability of inexpensive private plunge baths or even swimming pools in the basements of modern dwellings. Really artistic treatment could easily be developed in the construction of luxurious baths which would make of the old-time unsightly basement one of the most attractive human comforts



RESIDENCE OF DR. R. D. POPE, DU QUOIN, ILL.

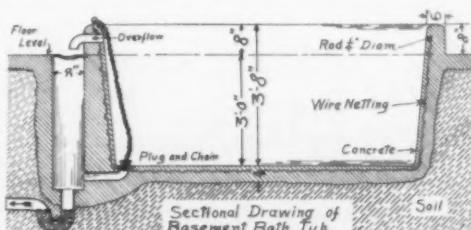
of the residence of the future. The availability of underground baths for all kinds of weather would make the enjoyment of the plunge quite as accessible in the winter as in the summer, and it requires little imagination to see what a tremendous improvement in even the most up-to-date designing can be carried out with the suggestion of this basement bath tub.

## Concrete Apartment Houses in New Orleans.

NEW ORLEANS, July 15.—The apartment-house "craze," as it is termed here by some who do not see the convenience and comfort of these modern houses, has set in in New Orleans, and several of these buildings are in course of construction. One of the most notable of these is the Casa Grande on St. Charles Street, of which MacKenzie & Biggs are the architects. It may be said that these were the first architects in the city to espouse the cause of concrete for monolith buildings. As time goes on they grow more enthusiastic over concrete as a structural material. They introduce it about buildings in every way that is acceptable to the customer. The Casa Grande will be four stories above the basement, and the entire structure is to be of reinforced concrete. The foundation walls, the exterior and interior walls and the floors are all of concrete. The only wood about the building will be the window sash and the doors, and in all the rooms will be laid hardwood floors over the concrete. The elevator shafts and elevators will be metal. There will be twenty-seven apartments. Illustrated page 45.

## The Concrete Roadway.

The concrete roadway or street is here to stay. True, there are still further improvements to come in this direction, but no new thing, however good it may be, is accepted at once. Every invention of modern times had its detractors and scoffers. The telephone, one of the greatest modern inventions of the age, was long regarded as a toy, and its commercial uses did not dawn on the people until almost a decade after the first telephone was invented. So it is today with the concrete roadway, which is yet in its infancy. There are none so blind as those who will not see, and there are those who dismiss the subject today as impractical and will not take the trouble to investigate the subject at all.



It has got to come, and the crushed stone man and the cement manufacturer by combining their energies can make it come sooner than anyone else. The other manufacturers of paving material are sitting up and taking notice, to use a slang expression, and they are using every effort to keep those who are interested in street construction in the dark by scoffing at the idea. There are many reasons advanced by these people why the concrete roadway is a failure, but none of them will bear the light of investigation.

## Well Equipped Plant.

FRESNO, CAL., July 17.—In common with most large places in California, Fresno has its artificial stone plant. That operated by the Worswick Street Paving Company, I found on visiting their works near the Southern Pacific tracks, is quite extensive. They have a Helm brick press and two Hercules block machines. In a considerable quantity of their larger work, heavy cement molds are used, strong steel clamps holding the parts in place. This refers to steps, sills, columns, etc. They are very clever at imitating granite in case of urns and I saw some steps in which a mosaic effect was produced by the use of scattered flaked marble. Also various colors were employed to get sandstone and other stone effects. Their shed is fully 100x100 feet in size. Standard brand of Portland cement from the works at Napa Junction and Santa Cruz is used.

## To Make Concrete Blocks.

NEW HAVEN, CONN., July 12.—The Gale Field Concrete Company, of Orange, has been organized with a capital of \$10,000.

In the corporation are the following: W. G. Carleton, president; George H. Simmonds, vice-president; C. H. Bird, secretary; Rolling A. Baldwin, treasurer and manager. Messrs. Carleton and Bird are not actively interested in the business.

The plant of this concern is located on Derby avenue, near the Maltby Lake. The company will manufacture all kinds of ornaments as well as concrete building block and a sand brick for fireplaces and a fancy building material. The business will be started in a few days.

The sand near the Maltby lakes is just what is needed for concrete and this company purposes to put the product on the market in the Eastern states. It is already well known in the West, where many buildings have been erected of this material.

## Plenty of Business.

ELLSWORTH, MAINE, July 16.—The Maine Concrete Products Company has been awarded the contract to furnish blocks for underpinning for the new house of Judge John A. Peters. The system used is the two-piece header bond system, which makes the strongest possible wall, and danger of frost is eliminated. A. L. Bickford, treasurer of the company, has a large number of desirable contracts.



## STRUCTURAL TILE.

## A New Branch of the Great Concrete Industry is Coming Into Being.

Structural tile for fireproofing purposes, for the construction of curtain walls and partitions for reinforced concrete and steel framed buildings, has rapidly introduced a wide demand for a new material but scantily provided heretofore. Beyond all the needs for this type of material in large buildings, structural tile is fast becoming popular for the walls, partitions, foundations and even the floors of every class of building from the barn, the garage, the little cottage, the palatial residence and flat building, as well as commercial buildings of all kinds, such as stores, shops and warehouses of every description. In short, no builder can any longer overlook the consideration of hollow tile walls and partitions to take the place of studding and siding and lath all made of wood.

It is recognized that lumber is a very expensive building material, and quite the most expensive to maintain with repairs and paint, while after all it can be considered as only so much tinder collected as fuel to feed a future fire which must inevitably come sooner or later. Wooden buildings are so calculated by insurance boards, and taxed accordingly.

Up to the present year the manufacturers of clay tile have with difficulty kept in sight of the growing demand for this class of products, and the use of tile in any but the largest buildings was discouraged as much as possible. At least, no effort has ever been made to attract business in this direction by the clay manufacturers. They doubtless saw the folly of provoking a call from the markets which they could not hope to supply.

Realizing all this, A. A. Pauly of Youngstown, Ohio, a successful practical contractor, who had already won his spurs as an inventor of several important mechanical devices for improving and economizing in the line of concrete building materials, got his genius to work and invented a system, together with the necessary machinery, for making concrete tile in every desirable shape that can be called for.

The Pauly tile is a pronounced improvement over any other similar material and was so pronounced and instantly accepted by all whose opinion in such matters is worthy of notice. The most renowned architects and eminent engineers observed the essential new qualities of the product in the following items: The evident extremely high fire-resisting quality of the material, being Portland cement in conjunction with sand, gravel, furnace slag, rock screenings or cinders. The true angles and perfectly plane exterior surfaces, with exact dimensions—this feature permitting of exact calculations, where all older products were so full of irregularities that all figuring could only end in troublesome approximations. The uniformly high compressive loading that they will stand, and last, but not least by any means, their light weight.

The Concrete Stone and Sand Company, of which Mr. Pauly is the manager, is one of the most important sand and gravel propositions in Northeast Ohio, and with his own material he carefully and cautiously worked out the problems of his great invention, with ample and frequent tests to establish every step of the way till a perfect product could be economically made in commercial quantities.

Early in the present year the Pauly tile-making machines were exhibited at the cement users' conventions, at once attracting the attention of the entire country. Engagements were made to supply machines and equipment to several of the leading material markets, and these arrangements, now nearing completion, are in the hands of the very best people in their respective markets.

The home plant at Youngstown has done a phenomenal business in spite of the distractions of the present building season. Nearly 2,000 tile of various shapes are being made daily, and they are now considering the matter of increasing the capacity for the third time or putting on a night shift to keep up with the demand.

Practically all of the building done within reach of the plant since its product came into the market has used more or less of the concrete tile, and several complete buildings have been constructed of it. These range in importance from four-room cottages to fire-proof skyscrapers of the grandest type.

No more important advance in the concrete industry is of record comparable to this structural tile business. It appeals to the dealer in materials who is in a position to get the proper ingredients for making such tile on the most advantageous basis, with an absolute knowledge of how he can market the product.

It amounts to a great opportunity to many parties who can make the tile out of materials already at hand that would otherwise be useless.

This amounts to a new industry which cannot fail to grow into very large proportions, for there is enough merit and ample profit to attract both the buyer and seller.

## Concrete Footings.

BY U. S. DRAKE.

In footings and foundation work concrete is of particular importance. Where a structure is properly designed its weight is so distributed that it falls equally on all points of the foundation soil. Undue pressure at any point will cause unequal settling at that point, producing excessive and unknown strain upon the portion of the structure thus affected.

In footing courses constructed of the usual rough stone masonry it is all but impossible to secure a foundation of equal strength at all points and an equal distribution of the load to the soil beneath. On the other hand, with reasonable supervision concrete can be placed in position by unskilled labor, while the masonry requires the use of the skilled mechanic.

Concrete becomes a solid, compact mass, and by doing so meets the requirements of a first-class footing for modern buildings. The rapidity and cheapness with which it can be put in place constitute another advantage over stone masonry.

Another advantage is that less excavating is required. The mason must have room to work, for mortar boards, material, etc., and ordinarily but few men can be employed at a time to advantage; hence it requires a longer time to erect the building.

The material for the concrete can be stored at any convenient point, mixed there and conveyed by wheelbarrows or any other suitable method and dumped into place. To properly dispose of and ram into place as many men as can work can be used.

The time required to put into place a given amount of concrete footing will be from one-eighth to one-third of the time required for masonry.

Forty-eight hours after the footing is in place the wall can be laid. The saving in time and wages between skilled and unskilled labor is an item of considerable importance.

To determine the size of footings required take the total weight of the building and contents per lineal foot of wall, then determine the nature of the soil on which the footing is to rest. For example, suppose it is desired to support a building of 10 tons per lineal foot of wall. By referring to the table of supporting qualities of various soils we find that loose rock will support with safety 7 tons per square foot. Therefore, to support 10 tons will require a footing  $1\frac{1}{2}$  feet wide. On dry sand the footing would be 5 feet wide. In spongy or wet, clayey soils a drain-pipe should be provided to carry away the surplus water from the wall.

Where the soil is good and the building not too heavy a grouted footing, made in the following manner, may be used: Supposing the footing to be 2 feet wide on which a 12-inch wall is to be placed. Dig a trench 2 feet wide and 6 inches deep, the depth

being the same as the projection from the wall. The trench is filled with broken stone or hard brickbats. These are thoroughly driven into place with a 6-pound hammer. See that none of the stones project above the top line of the footing. When a cellar floor is desired the top level of it will be the top line of the footing. The extension of the footing for a foot or more on the inside of the wall will not only add support to the building against wind pressure but will be of considerable advantage as a place on which to stand when laying the cellar floor. A grout is now made of Portland cement 1 part, sand 2 parts, and fine gravel or very coarse sand 3 parts. These are thoroughly mixed dry. Use water sufficient to make the mass thin enough to pour. Moisten the broken stone thoroughly and pour this grout over them, carefully filling all the voids. Then ram well and let it remain to harden, which will require about two days.

The footing should be protected from the direct rays of the sun.

One barrel of Portland cement, 7 cubic feet of sand, 10 cubic feet of fine gravel and 32 cubic feet of broken stone will make 30 lineal feet of footing 2 feet wide by 6 inches deep.

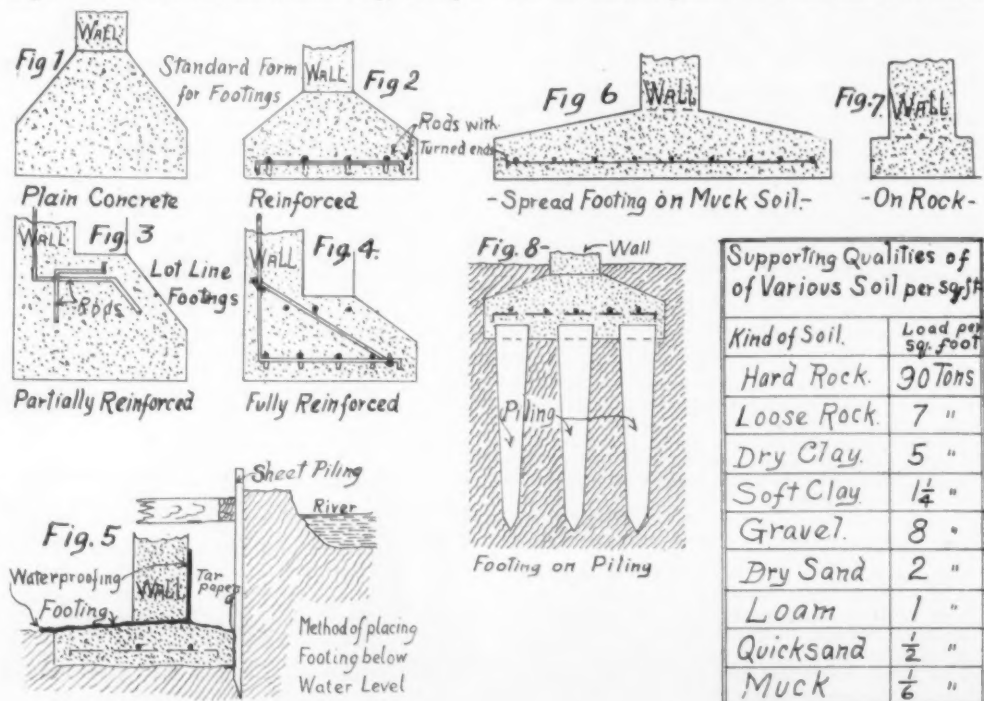
The various forms of concrete footings are illustrated by the accompanying cuts, and are sufficiently plain to require but little explanation. In Figure 1 it will be seen that the top lines are on an angle of 45 degrees. This is necessary to give it sufficient volume and strength for plain concrete.

It will be noticed that in Figure 2 there is quite a reduction in bulk, though it is of equal strength with that shown in Figure 1, it being reinforced by having round or twisted steel rods imbedded in it. This is a better and cheaper footing than No. 1. The reduction in its bulk and saving in time to lay it more than make up the cost of the steel rods. It is best to use  $\frac{3}{4}$ -inch rods. They cost less per pound than a smaller rod and, being stronger, can be placed farther apart.

When it is desired to build up to the lot line a footing as shown in Figures 3 and 4 is used. It is not wise to make this footing of plain concrete. A practical reinforcement as shown in No. 3 is required, and in very heavy work a fully reinforced footing must be used. Full reinforcing is shown in Figure 4. These two designs are also of the same strength. Where the rods cross they must be tied with wire. A No. 10 soft wire will answer for tying.

When the footing is near to a stream or any body of water, and below the level, so that there is likelihood of the water entering the foundation so as to be in the way of laying the wall and footing, a sheet piling as shown in Figure 5 is used. When piling is driven to place a strip of tar paper is placed between the piling and the concrete, so that the piling can be easily removed without marring the concrete.

To lay a concrete foundation in the bed of a stream, watertight cribbing is built large enough to put in the forms and still have room to work in. From this the water is removed by pumping. The necessary excavating can be done, the form erected and the concrete placed. The wall should be raised



above the surface of the water and allowed to harden before the cribbing is removed. In such instances it is nearly always best to mix and place the concrete dry (the same as if placed under water), as the water entering the cribbing will be absorbed by the dry concrete.

On muck soil, where the work is not heavy and there is room, a spread footing as illustrated in Figure 6 should be used. But if the work is heavy a footing set on piling would be much safer and more satisfactory.

On hard rock little or no footing will be necessary, because of the solidity of the rock. A simple way to do in case a concrete wall is put in is to raise the bottom plank of the form a few inches above the bottom, thus letting the concrete spread a little as it is rammed into the forms.

Where footings are built on piling, an illustration of which is found in Figure 8, the piling renders the ground more solid by displacement; hence the larger the pile, the greater the displacement. Therefore we space them twice the diameter from center to center. Piling 10 inches in diameter is spaced 20 inches. If 20 inches in diameter they would be spaced 40 inches from center to center. They should be set so that those of the second row would come between those of the first row. This is best known as staggered. This will aid in making the ground more firm.

The carrying capacity of footings set on piling is estimated from the diameter of the piling and the number of blows required to drive it the last inch. A 10-inch piling driven until twenty blows are required to drive it the last inch would carry a load of 8 tons, and 20-inch piling driven with the same severity would carry 26 tons.

The superiority of concrete piling over wood is so apparent and well established that we will speak here only of that made of concrete. Various methods have been tried in the manufacture and driving of concrete piling, some of which never passed the experimental stage. The one most generally used now is composed of a collapsible core of a conical shape. Over this cone is placed a tightly fitted shell of thin metal. This is driven to the required depth with an ordinary piledriver. The core is then reduced and withdrawn, leaving the shell remaining in the ground. This shell is filled with carefully mixed concrete well tamped during the filling process. The top of the piling should be allowed to extend 6 inches or more into the footing.

In large buildings it is necessary to have piers to support the interior. Footings for piers are constructed in the same way as footings for walls. The size of the pier footings is determined in the same manner as for walls. Calculate the load to be carried, and by referring to the table of soil loads under the appropriate soil the size of the footing needed is readily found.

A footing to support 24 tons on soft clay would cover 19 square feet or be 4½ feet square. If placed on gravel, 3 square feet or 22 inches square. On quicksand, 48 square feet, or 7x7 feet in the bottom.

We will now give some directions for preparing and placing the concrete. A good average mixture for footings is 1 part cement, 3 parts sand and 6 parts gravel. To this may be added 4 parts of coarser aggregates for heavy, plain work. These should be carefully measured by volume. No guesswork will do here. Provide a measuring box that will hold enough of each ingredient for one batch. Let the batch not be too large—just what can be placed in the footing before the initial set begins.

When the mixing is to be done by hand, construct a platform of planks. Be sure that it is water-tight and large enough to afford plenty of room to turn the mixture. On one end of this platform place a measure of sand, on this a measure of cement. Mix these until the mass is of a uniform color, which will require at least three turnings with a shovel. Wet the gravel and broken stone and spread on top of the mixture. Now turn this at least three times, adding the water slowly. The quantity of water should be varied to suit the nature of the work. Generally it should be of a mushy appearance, too soft to bear a man's weight when in place. A sprinkling can would be handy for putting on the water. Do not use a hose unless fully experienced, or much of the cement will be washed away. For a large job a mixing machine should be used as a matter of economy.

After the batch is mixed get it into place as quickly as possible, using any convenient method. The layers of concrete should be 6 or 8 inches thick. When the mixture is in a jelly-like state it should be rammed with a square-ended rammer until the mortar flushes to the top. Wet concrete is simply puddled to expel the air and surplus water. Before placing a fresh layer on concrete that has become set, the surface should be cleaned of all dust or seum and thoroughly wet. It should also be roughened so that the new layer and the old would be

properly bonded. This can be done by driving a piece of wood, say 2x4, edgewise into the last layer of concrete and removing it before the concrete is fully hardened. This will leave a groove into which the new layer will go and form a complete bond.

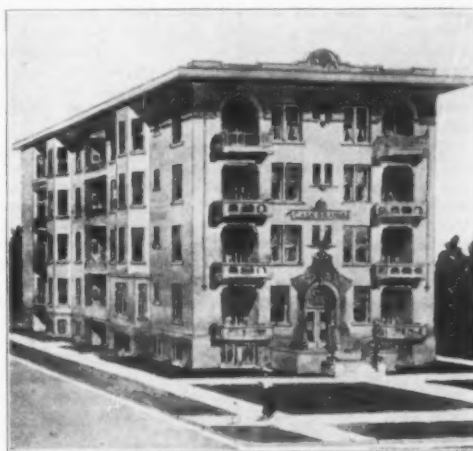
### Concrete Workers Busy.

EAST ST. LOUIS, Mo., July 16.—Under the style of East St. Louis Artificial Stone Company, W. F. Davis, who recently bought out his partner, is engaged in the manufacture of concrete blocks at 2000 St. Clair Avenue. Mr. Davis informed the ROCK PRODUCTS man that, at present, he is principally engaged in getting out material for foundation work. In the manufacture of blocks he uses two large Normandin machines, also a Pettyjohn and a Coltrin. For cement he handles the Universal.

In St. Louis and East St. Louis there is a demand for burial cases, and the ROCK PRODUCTS man found that in both cities a process is employed which renders these cases at once durable and water-tight. A wooden case is covered with a mixture of sand, gravel and Portland cement, and when set, a very strong, but comparatively light, case is the result. John F. Domhoff has, in the rear of 1460 State Street, a large warehouse, about 100x50 feet, to accommodate his business in this line. He uses Red Ring cement. He has a large stable in the rear of the building.

### What Date Shall it Be.

The executive committee in charge of the Second Annual Cement show of the Cement Products Exposition Company, feel that the date of holding the next exhibition is one of primary importance. They



CASA GRANDE APARTMENTS.

First Entirely Concrete Building in New Orleans.

wish to conduct the show in strict conformity with the ideas and wishes of the exhibitors, since it is for their benefit that the show is to be held. The Coliseum at Chicago is obtainable for four dates, namely, December 16-23, 1908; January 4-10, February 14-20, March 2-8, 1909.

In order to determine the consensus of opinion of the exhibitors and others interested, a vote is being taken upon the matter of the selection of the date. If you have a preference in the matter we will be pleased to have you write to us regarding the same and we will hand it over to the executive committee.

### Does Good Work.

ST. LOUIS, Mo., July 16.—Not much has as yet been done at St. Louis in the use of concrete blocks for building construction in comparison with even much smaller cities. At North St. Louis the ROCK PRODUCTS man found John Nyflot, of 7311 Florissant Avenue, engaged in erecting a two and one-half story dwelling 52x24. Mr. Nyflot uses an Ideal block machine. In the preparation of material, he finds Atlas cement very satisfactory. Mr. Nyflot was justifiably proud of his work, which certainly was equal to any. A feature of his blocks, as shown by test witnessed while inspecting the job, was the water-proofing which is secured by the use of the Ideal water-proofing compound.

Mr. Nyflot says he is in the market for mixers and machinery.

The Vulcanite Paving Company, of Philadelphia, has secured the contract for the concrete work on the addition to be built to the plant of the J. J. Felin Company, 4144 Germantown avenue, at a cost of \$50,000.

Frank Davis, a prominent contractor of Middletown, O., has been awarded the contract for building a reinforced concrete dam just north of the city at a cost of \$38,000. Work will commence at once.

### New Incorporations.

The Reinforced Concrete Pipe Company has been incorporated at Jackson, Mich., to make reinforced concrete pipe. Capital, \$500,000. Incorporators: Edward F. Lowery, Peter B. Loomis, George E. Loomis, Thomas E. Barkworth and Gilbert S. Loomis, all of Jackson.

Jones & Chowning have started the manufacture of concrete blocks for building and paving purposes at Richmond, Va.

A. Z. Bogert & Bro. has been incorporated at River Edge, Riverside borough, N. J., to manufacture brick, stone and building materials. Capital, \$30,000. Incorporators: Albert Z. Bogert, Charles H. Bogert and Catherine A. Bogert.

The Wilson Reinforced Cement Company has established a plant at Nebraska City, Neb. It has the contract to furnish Otoe county with drain tile.

The Harrisburg Concrete Tile and Construction Company has been incorporated at Harrisonburg, Ill., to manufacture cement and clay products. Capital, \$15,000. Incorporators: John Melone, David C. Melone and John T. Irwin.

The Ferro Concrete Contracting Company has been incorporated at New York City. Capital, \$10,000. Directors: Thaddeus Faber, James J. Sullivan and David H. Solotaroff, 35 Nassau Street, New York.

Lesh & Son, Ft. Wayne, Ind., are adding some new machines to their artificial stone plant and are working overtime to supply the demand for building blocks.

The American Cement Engineering Company has been incorporated at Manhattan, N. Y. General contractors. They will manufacture building materials and deal in cement, lime, brick, etc. Capital, \$400,000. Incorporators: E. E. Brown, New York City; A. M. Gildersleeve, Brooklyn; C. H. Reedt, New York City.

A concrete building and construction company has been organized at Brown City, Mich. The officers are: Jacob S. Witmer, president; Martain Taylor, vice president; David Graybiel, secretary-treasurer.

The Continental Artificial Stone and Manufacturing Company has been incorporated at New York City. Capital, \$50,000. Incorporators: A. Tralio, T. B. Tracy, A. K. Harper, J. D. Jones.

J. H. Peter, formerly general manager of the Foster & Herbert Cut Stone Company, has organized a new concern at Nashville, Tenn., to do a general stone and concrete construction business and for manufacturing artificial stone. Capital, \$20,000. Incorporators: Joseph H. Peter, J. B. Jurbee, C. H. Behmer, Henry Alsted and Edward P. Wetstein.

W. P. Demont is establishing a plant at Enid, Okla., for the manufacture of molds and forms for concrete work.

The Electrical Cement Post Company has been incorporated at Mayville, N. D. Capital, \$10,000. Incorporators: W. H. Robinson, W. C. Paulson, both of Mayville, N. D., and Gunder O. Berge of Hillsboro, N. D.

The Electrical Concrete and Engineering Company has been incorporated at Spokane, Wash. Capital, \$300,000. Incorporators: J. C. Adams, G. S. Adams and R. L. Battan.

The Yale-Field Concrete Company has been incorporated at Orange, Conn., to manufacture concrete building blocks. Capital, \$10,000. The incorporators are: Rollin A. Baldwin, C. H. Bird, W. G. Carlton and George H. Simmonds.

The Monon Cement Tile Company has been incorporated at Monon, Ind. Capital, \$15,000. Directors: John S. Sandy, Harry A. Bond and Edward E. Sluss.

The Greenbrier Concrete and Construction Company has been incorporated at Hinton, O. Capital, \$10,000. Incorporators: George O. Queensbury, J. L. Crush, Howard C. Hinton, Edgar Crush, A. T. Vialand, R. F. Dunlap, all of Hinton.

The Lidgerwood Manufacturing Company has just issued a new catalogue describing and illustrating Lidgerwood cableways and their many successful applications on great engineering works and for numerous other purposes where large quantities of materials have to be hoisted, conveyed and delivered with celerity and economy.

From cover to cover, the whole 168 pages of this book are filled with illustrations and data which are not only convincing proof of the remarkable adaptability of the Lidgerwood cableways to the purposes of the engineer and contractor, but the whole forms a treatise upon cableway practice which has no equal in print.

In the hands of an engineering instructor this work would form a complete text book on cableway practice.

An engineering writer would find in it material for a complete series of papers on cableways.

The book was compiled by F. F. Coleman, who has handled the subject in a masterly manner.



## MEMPHIS' NEW COURTHOUSE.

## A New Temple of Justice Presenting Many Interesting Features in its Construction.

MEMPHIS, TENN., July 8.—When the new Shelby County Courthouse is completed Memphis will have a public building that she may well be proud of, and justly so, for in point of appearance and cost it will be exceeded by few, if any, buildings of any character to be found throughout the South. Memphis has long been in need of this new building, and it is being constructed with the intention of not only meeting the demands of the present day and time but to also accommodate the courts and officials of Shelby County in the years to come.

The work is now rapidly nearing completion, and the following description will give an idea of the general appearance of this noble new structure, the view showing the portion fronting on the Adams and Second Streets sides.

The architects, Hale & Rogers, who have offices at 11 East Twenty-fourth Street, New York, and in the Ashland Block, Chicago, have followed the classic style of architecture in designing and building. Its dimensions are 220 feet east and west, and 240 feet north and south, which, with the ground area, covers the entire block bounded by Second, Third, Washington and Adams Streets. The approximate cost when completed will be about \$1,500,000. The original contract with the builders was for \$897,000, but a later appropriation of \$500,000 was made to cover the interior finish and decorations, \$80,000 of which is for statuary and cut-stone sculpture work alone.

The building will be three stories above the basement, with an interior court about 90 feet square extending all the way to the top. This interior court will be faced with buff brick and terra cotta, the first five courses of the base being of stone. The outside of the structure will be faced with blue Bedford stone, which is all cut at the quarry and is tooled with ten cuts. This is said to be the first instance on record where more than eight cuts have been required.

In the construction of the concrete floors several novel features were introduced which should be of more than ordinary interest to concrete engineers. As shown in the accompanying illustrations, stiffening ribs were laid every two feet from center to center, and reinforced with 1-inch steel rods. The cross ribs are spaced at intervals of 7 feet from center to center. Over all this is laid a network of distribution rods 18 inches apart. The reinforcing rods in the stiffening ribs are so placed that the centers are 1 inch above the bottom of the floor. The center rods are raised at the ends about 7 inches and the other rods about 2 inches, so as to put them at once into tension. Over this system of reinforcing a layer of rough concrete was laid to a depth of 6 inches, and on top of this a 2-inch layer of finished concrete.

All the rods used for the reinforcing were cut and bent by hand upon the premises to suit the building conditions. Although this was a more expensive process than is usually employed, the contractors believe that the results will fully justify the additional cost.

Another interesting feature in connection with these concrete floors is that they extend over all the walls and partitions, each span being tied to the adjacent one, making the whole floor in reality a monolith or one whole piece of concrete without a break. All necessary pipe chases or ducts, etc., are provided for in the floors. Between the floors and the outside walls of the building is a 1-inch slot to take care of any expansion or contraction. The average thickness of the walls is 3 feet, the footings of which are 20 feet wide and 6 feet high.

All the concrete used throughout the building is thoroughly mixed in a Smith mixer. The mixture is 1:2:4½, and the size of the crushed stone used is from ¾ to 1½-inch. The cement used is the "Red Ring" brand and was delivered by the St. Louis Portland Cement Company.

The sculpture work on this new temple of justice will be unusually attractive. The contract has been awarded to J. Massey Rhind, the noted New York sculptor.

John Gaisford is the supervising architect in charge of the work. The John Peirce Company of Chicago and New York are the contractors. This firm is one of the largest and best known in this country engaged in this line of work, having built many of the finest buildings in the United States, such as the Chicago Postoffice, Indianapolis Postoffice, Milwaukee Postoffice, Washington Postoffice, New York Customhouse, Hall of Records, New York, State Capitol Building, Albany, N. Y., etc.

R. G. Bodwell is the local representative of the John Peirce Company, and is superintending the construction work on this new building.



## Let's Have a Standard Sand Lime Brick.

The sand-lime brick industry occupies the unfortunate position of being attacked by a direct campaign on the part of the clay industry. Almost every paper that you read, and especially those that are in any way controlled by the clay industry, the sand-lime brick as a building material is openly denounced. Every shortcoming on the part of the manufacturer, every carload of bad brick that is shipped out, is seized upon as excuse to unfold a tale of dire disaster in the attempt to frighten the builders.

It is true that some sand-lime brick are turned out of indifferent quality, and this should be remedied before a sweeping defense of the entire industry can be made. Yet it is only common justice to the majority of the manufacturers to state that they are making a first rate building brick, and in some cases a very high-grade face brick, at prices that are ridiculously low in comparison with what clay brick of the same quality are sold in the market.

There is absolutely no reason why there should not be a tremendous demand for every good sand-lime brick that is now made in the United States. In the face of organized opposition it has seemed impossible even through the National Association of Manufacturers of Sand-Lime Products to make very much headway. The clay men on their side are a host in numbers and have a fighting fund that is practically without limit. The sand-lime brick manufacturers are few in number, they have always sold their fine brick at too low a price, they have not made the money to contribute to a defense fund, and so the case goes by default.

The contractor, the brick mason, the architect are pommelled ceaselessly with literature openly denouncing sand-lime brick, as well as covertly making derogatory insinuations against it. Every manufacturer has the means of knowing whether his product is superior to the clay brick with which he comes in competition or not. In most cases he has a very much superior article, and has always made the mistake of attempting to meet the price set by the clay brick man when there was really never any occasion for such a thing.

If there was ever a time for a rally that time is now, for building operations are picking up in all parts of the country, and we have to say to the sand-lime brick manufacturers that if they will make sure that their brick is right, we will be glad to publish their letters in defense of their product without cost to them.

If they have the pluck to say for their product what they know to be true, in comparison with the overdrawn and unfair statements that come from the clay brick press and which are often repeated in the

newspapers that the people generally read, let it come on.

Let us have the testimony of the men who have succeeded in placing sand-lime brick satisfactorily so that at least an answer may be made to all of this unjust discrimination.

## Prejudice Entirely Overcome.

MOLINE, ILL., July 11.—W. H. Crume, general manager of the Tri-City Sand Stone Brick Company, has favored us with a picture of the warehouse of the Moline Plow Company which was built with the brick of their plant about one year ago. One million brick were used in the building. Mr. Crume remarks that the building business has been very dull in his vicinity for the past several months, but notes that since the first of July there has been a decided improvement. He has just placed an order for all of the brick to be used in the construction of the new manual training school which will be made of blue-gray brick for the exterior and white brick for the main interior lining. The white brick lining has been found attractive for the reason that no plastering is required where the clear white brick makes interior finish. He is also shipping on an order for a schoolhouse at Silvis, Ill., which is being built of white brick with blue-gray brick trimmings.

Speaking of his factory, he says: "In our manufacturing department we have had no cause for complaint this season, as we have averaged a production of 21,300 brick per day. We are maintaining the same prices as last year, and absolutely refuse to cut. Experience now shows that this was the proper position to take, as we have secured the bulk of the business offered in the face of 15 to 20 per cent cut in prices by the local clay brick makers. Our brick are being freely specified by the architects, and the leading mason contractors do not hesitate to recommend our brick. We feel that all of the prejudice against the new building material has been entirely overcome in this locality."

The Excelsior Granite Brick Company, of Chicago, Ill., has been incorporated with a capital stock of \$85,000 by L. H. Pleins, C. Schmidt and A. J. Schmidt. They will manufacture sand-lime brick, using furnace slag to a considerable extent in the mixture, and claim that they are prepared to make a brick with enameled facing. Their product will be ready for the market within sixty or ninety days.

The Montana Granite Brick Company, Helena, Mont., has begun the erection of a plant to manufacture sand-lime brick. The main building will be 160x80 feet. It will have a capacity of 15,000 sand-lime brick per day. They are also making arrangements to manufacture blocks of the sand and lime material. Sand and lime will be procured within a few miles of Helena, deposits of material particularly suitable for the purpose having been secured. They expect to have their plant in operation within the next sixty days.



MOLINE PLOW COMPANY'S WAREHOUSE, MOLINE, ILL.

# QUARRIES

## Penitentiary Products.

Oft have we called attention to the convict labor proposition in connection with road building. From time immemorial it has been the dream of puerile statesmen to devise some means whereby the convicted felons of the state may be forced to do the hard manual labor of the community and thereby contribute to the comfort of the law abiding masses of the people. The subject is already threadbare with much handling, for, beginning with the dawn of history, we find this dream expressed in the acts of every potentate.

The commerce of the ancients was propelled by means of oars in the hands of galley slaves, and without omission each succeeding form of government has endeavored to translate the physical power of the convict into some commodity that will contribute to the happiness of mankind, and thereby is the divine principle completely lost which provides contentment only for such human beings as have employment for both mind and body, and inversely inherent or self-propagated misery for such as are not so fortunate as to find the crowning blessings of occupation.

The dictum of the frowning judge when he pronounces sentence upon the convicted felon that condemns him to imprisonment at hard labor repeats each time a misconception and error that originated in and has obtained since the dark ages and through the feudal system.

The intense commercialism of our times has brought about a peculiar anomaly in the application of convict labor. The judge is no longer clothed in sable gown with solemn wrinkled brow beneath a flowing wig, but in perfunctory fashion he drones off the reading of the form of law that commits the convict with just as brief attention as he can give to it. The wardens in their turn have become the appointed managers of immense industries that are provided with enormously expensive equipments purchased with funds that are accumulated by taxes to support the government of the state. A commercial profit for the penal institution, its officers or for the state is the prime visible object sought.

The penitentiary is an institution built for the purpose of safeguarding society, which is the first guarantee of good government. Convicts are sent to prison for the purpose of punishing them primarily, and secondarily to teach them how to work, so that at the expiration of the legal punishment, they will have acquired the habit of work, which is the only route whereby they can be made peaceful, happy and law abiding. If the convict realizes that his penal servitude creates a valuable asset or profit, the entire principle of the lesson becomes so obscured that a man of average intelligence cannot comprehend the object of the law, the purpose of the penal institution and so the effectiveness of the punishment is lost.

There can be no more sacred trust in a popular government than the right of the state to collect taxes upon the efforts and energies of all the law abiding citizens, and it is a direct abuse of this sacred trust to jeopardize such moneys by investment in industrial enterprises that call for large outlay and no less expensive maintenance. There is no justice nor equity in commercializing the product of convict labor, nor is there any right vested in the state to operate manufacturing establishments in competition with the industries of the citizens who are taxed to sustain the state.

Observe the modern spectacle. We have penitentiary shoe shops, penitentiary cooper shops, penitentiary lace factories, penitentiary printing offices and penitentiary rock crushing plants and quarry operations. All of these unholy industrial enterprises are unjustly conducted by the state. There is not one of them which would be self-sustaining on a commercial basis, if they were taxed in the same manner that independent enterprises are taxed. Most of them are maintained by constant contributions from the funds of the state, drawn by taxation from the varied industries with which they come in competition. Thus the manufacturer, who pays the taxes, has his burden doubled by means of competition that his own apportionment supports and makes possible.

Certainly it would be nothing less than equity for the state government to remit the taxes of all enterprises, and personal and corporate investments, where the products of the state institutions, conducted as

manufactories, come in competition with legitimate business; and at the same time, products manufactured at state institutions should go on the market at a parity and under the same conditions as the products of legitimately conducted businesses.

When the penitentiary crushing plant begins to manufacture crushed stone, using convict labor, which is sustained by the funds of the state, and the railroad companies are allowed to take a large percentage of the product of the penitentiary crushing plant instead of money as payment for freight bills, the injustice and unfairness to the quarry operators becomes more flagrant than that of any other industry perhaps which has to compete with the state. It is amusing to learn that there are instances of record where a railroad company charged five cars of ballast for transporting one car of crushed rock to a delivery point at the end of its line. Now, wouldn't that look as if the railroad was the real beneficiary of such a transaction? When the state and national authorities object to a railroad paying its advertising bills through the transportation department, by issuing mileage books instead of money, these authorities insist that the railroad must pay money for what it buys and must receive nothing but money for services rendered. In other words, if the railroad is allowed to take ballast rock instead of money for freight bills, where does the argument get a foothold that prevents the passenger department from paying advertising bills with mileage books? In times of business depression, when there is not enough employment to go around for the wealth-producing and tax-paying workman, why should the products of the state supported institutions guarantee work, food, shelter and clothing to convicted felons, while the men of the greatest value to the community must hustle the best they can?

These questions are all worthy of consideration and they should not be overlooked when it comes to the choosing the lawmakers that are to pass on these questions for the various states in the coming election. If you have an interest, see that the man who represents your town or district, represents your business, your establishment and your investment; and if you do not see to it, they will probably be misguided by others who take a deeper interest in the real things of life.

## Good Roads Talk.

One of the big questions before the people of this country today is that of highway improvement. Throughout the country the taxpayers are waking up to the fact that there has been an unequal distribution of the burden of expense for highway improvement that extends back to colonial times. It shows how tenacious a fixed idea becomes and how much time and work are necessary to correct an error.

In the earlier days of the republic, before the advent of railways, nearly every settler was both a producer and consumer; he raised what he lived upon and the spinning-wheel and hand-loom were used to manufacture his clothing. It was the age of the "home-spun," and trade was a matter of barter and exchange between neighbors. The farm products were consumed in the neighborhood where they were produced.

Under such conditions the roads were considered a local matter; they interested no one except the parties who actually used them, and so by law and by consent the matter of highway improvement was left to each township or road district to deal with as they pleased. The advent of railroads and the wider distribution of food products and the advent of the factory system whereby thousands and millions became consumers who were not producers of farm products, which necessitated the shipping of supplies from one end of the country to the other, and the establishment of a broad market with market reports flashed hourly from city to city and from continent to continent, made new conditions in which the public highways were an important factor. As a matter of fact the road conditions in Illinois affect the markets in New York, so under the new order of things public highways become of state and national importance, and as their condition affects everybody, everybody should be taxed to improve the roads.

Thus the whole system of placing the entire burden upon the farmers is being relegated to the rear and the new idea of state aid has taken its place. Under the state aid plan all property of the State is assessed to pay a portion of the expense of highway improvement. The next step will be Federal aid, and this is not far away.

Another mistake has been made from the first and still prevails to a large extent—that is, the idea that the farmer can build the roads. This has been responsible for the waste of millions upon millions of dollars with very little benefit to the highways. As a matter of fact it takes engineering skill, experience and proper equipment and machinery to build roads. So the first step in the direction of good roads is ex-

pert supervision and the work done by experienced builders.

Another unbusinesslike procedure that has held sway in many states has been the levying of a local tax each year, raising \$1,000 or \$2,000 for the purpose of building hard roads. This was expended by hiring teams to haul out gravel, crushed stone or other road material and putting a string of it down the road, letting the teams trample it into position to make the highway. In some instances attempts were made to let contracts to build half a mile of road. It often happened that no bidder could be found. It would take just as much time to get ready to build half a mile of road as twenty miles and no contractor is looking for a little job. If he takes it at all it will be at a high price.

There is only one way to build roads and get the best results for the least money; that is to build roads in systems with as large a mileage as possible, and build them by contract with a capable road engineer to set the grade stakes and provide for the drainage. It should not be lost sight of that drainage is the most important part of road building. Any road will go to pieces unless properly drained. A better road can be built of eight inches of road material drained than a road of twice the thickness that is not drained. So the best and most economical plan for any township to adopt that desires good roads is to issue bonds and build all the roads possible and invite competition. If the job is from five to twenty miles the competition will be sharp and the township will be able to save from 15 per cent to 20 per cent on the first cost, by reason of competition and better results will follow. Men who are skilled in the work can do the work better, quicker and cheaper than those not used to it. Hence the importance of having an experienced contractor of good standing with a capable engineer in charge to see that the specifications are followed and the work well done.

Another question that will interest townships is the material to use. This will have to be determined by the cost and accessibility of stone or gravel. If gravel is on the ground that should be used, as it would be very much less expensive than to ship in crushed stone; but if the material must be shipped, crushed stone should be used. It makes a better road, more durable, costs less to maintain and is of more uniform texture and gives better results; in fact, the best grade of stone road is worth 40 to 50 per cent more than a good gravel road. One of the troubles with gravel is that it lacks uniformity; some of it will be coarse, then will follow a lot of fine stuff not much better than sand, then more or less clay is mixed with it. A gravel road is more affected by frost and ruts up more readily than a stone road. The gravel stones are rounded and more easily displaced than the irregular, fractured crushed stone. Experienced road-builders will agree that stone at \$1 a yard is cheaper than gravel at 60 cents if the durability and desirability of the road are to be considered.

The time is opportune for pushing the question of good roads. The papers are full of the subject from Maine to California and from the Lakes to the Gulf. More is being said and written about good roads now than has been the case at any time for twenty years. The day of good roads is dawning. Both political parties at their conventions included a good roads plank in their platforms, thus recognizing it as one of the live questions. The farmers are waking up to the fact that up to date they have been largely imposed upon and have imposed upon themselves by permitting all the burden of highway improvement to be placed upon their shoulders. Under the state aid plan, where every dollar's worth of property is taxed to help build the roads, farm property is relieved of anywhere from 20 to 60 per cent of the cost. Good roads are bound to come, and both the state and national governments should help to build them.

## Increased Capacity.

DAVENPORT, IA., July 2.—J. W. Crowley, president of the Linwood Quarries Company, says: "We have just finished installing a new No. 7½ Austin gyratory crusher, which will be operated in addition to our No. 5 Austin. The two machines combined will give us a capacity of 700 to 750 tons per day. Up to the first of July the weather conditions have been very unfavorable to quarry operations. It has been so wet and rainy that we have been hindered to a considerable extent. The demand for stone in our territory is not as good as last season, and prices have declined 20 to 25 per cent, which brings it right down to the cost. This is partially due to the fact that the Rock Island Railroad equipped a quarry to turn out their own ballast for the southwest division, however, we believe that this only affects business locally, for our associates in the quarry business in the interior of Iowa inform us that there is very little change in the price or the demand."



## THE GREAT PLANT.

Of the United States Crushed Stone Company  
Near Chicago.

The business of crushing stone for commercial purposes is as old as the country itself. Its development has been slow but sure. It has not grown in leaps and bounds like some other industries, but its progress has been steady nevertheless. When cement came into such general use a few years back a howl went up from the quarrymen, who thought they saw the death of their business. As a matter of fact it merely changed the complexion of the business. They had an idea that when the demand for rubble, flagging, rip-rap and curbing fell off their business was gone. Some few still have that antagonistic feeling. But the leading men in the business have come to realize that there is more to be gained by working in harmony with the concrete man. What the crushed stone man thought at first would be the death of his business has really been its salvation. More crushed stone is being used now than ever before, and with the advent of the concrete roadway, which is only in its infancy, the use of crushed stone will still further increase. This is merely mentioned as showing the growth of the crushed-stone business and to give some idea of its future possibilities. It is needless to say anything at this time as to the many uses to which crushed stone is being put at the present time, for all of our readers are familiar with the same. There are many problems confronting the crushed-stone man today, and the solving of the same is no easy matter.

With the progress of the industry came better and cheaper methods of handling the materials and better methods of crushing the same. With this growth has come the organization of selling forces who fight for business.

Economy is the watchword in the crushed stone business. Old methods are giving way to new ideas. Of course the character of the stone is the first consideration, as the harder the stone the greater the cost, as a rule.

One of the model crushing plants adjacent to the city of Chicago is that of the United States Crushed Stone Company, whose offices are in the Woman's Temple Building at 184 La Salle Street.

This company is one of the newest companies to enter the local field, and was organized in 1906 by Charles A. Klotz, the president and general manager. It recruited the various heads of their operating and sales departments from men who had learned the business with the older companies. Every man was experienced in his line, and the new company immediately became a factor to be reckoned with.

The quarry and plant are located at McCook, Ill., which is only a short distance from Chicago, and with unequaled railroad facilities, as it is located on the Santa Fe Railroad, the Chicago Terminal Transfer Railroad, the Indiana Harbor Railroad and Chicago and Illinois Western. At this point the company owns 300 acres of fine stone land, with



QUARRY AND PLANT OF UNITED STATES CRUSHED STONE COMPANY AT MCCOOK, ILL. ATLANTIC STEAM SHOVEL AT WORK IN FOREGROUND.

comparatively no stripping to be done, as the stone crops out on the surface in many places. It is a limestone, running from gray to white in color, and remarkably free from flint.

This company began operating March 15, 1907, and from the first day operated its plant to full capacity. The general method used in the vicinity of Chicago for loading stone from the quarry into the quarry cars is by the employment of foreign labor, who load it by hand at a cost of about 10 cents per yard. The management of the United States Crushed Stone Company departed from this general custom, and is using with great success two 100-ton steam shovels for this purpose, one of which is an Atlantic and the other a Bucyrus. The only difficulty experienced in this method of operation is the fact that the ordinary gyratory crusher is so constructed that it cannot take into its hopper large blocks of stone capable of being loaded into quarry cars by steam shovels, and it seems that the deeper the stone is quarried, the larger the blocks become.

Having that in view, the management of this company have recently contracted with Thomas A. Edison, the inventor, for the exclusive license within the State of Illinois for the patented Edison rolls. Plans have been drawn and contracts let for the installation of a plant incorporating the Edison rolls, the construction of which is to begin at once. The rolls to be installed have been especially designed by Mr. Edison personally, and are to be 7 feet long and 6 feet in diameter. These rolls will have a capacity of 10,000 tons in ten hours and will crush a block of stone weighing 10 tons through a 6-inch opening in less than thirty seconds.

At the present time the plant of the company consists of a No. 8 Gates crusher, two No. 5 Gates crushers and two No. 3 Austin crushers.

The quarry, which was opened in March, 1907, is at present about 1,500 feet long and 400 feet wide, with an average depth of about 50 feet. To give an idea of their operations, it is estimated that about 300,000 cubic yards of stone were removed last year. The loaded quarry cars run by gravity from where the steam shovel is loading them to the foot of the incline, where the cable hooker attaches them to the cables. This incline, which is at an angle of 40 degrees, leads up to the top of the No. 8 Gates crusher, and is hoisted up by a hoist manufactured by the S. Flory Manufacturing Company of Bangor, Pa., which is capable of taking up two cars at once, both fully loaded, and has given eminent satisfaction at this point. While as a usual thing the cars carry less than four yards at a time, there is no difference in the time required taking the cars to the top, and if it is necessary three cars a minute can be safely handled. The crusher plant was constructed with an eye for economy in handling the material, and is as nearly automatic as it is possible to build it. The building is built on a solid concrete foundation which extends up under all the crushers.

After the material passes through the No. 8 Gates crusher it goes through the screens to the two No. 5 Gates crushers. The tailings are then taken up in bucket conveyors to the top of the building to the 24-foot screens. There are two of these big revolving screens, which were built by the Johnson & Chapman Company for the Allis-Chalmers Company, who installed them in the plant. What won't pass through a 2 1/4 hole is then returned and recrushed in two No. 3 Austins, after which it is conveyed by means of belts out to the bins, where it is loaded into the cars, which can be placed underneath or carried on out and dropped in the stock piles. There are four elevators in all, of the usual bucket type, and a belt conveyor. A shaker screen for the concrete size is a very essential part of the equipment. The entire plant is operated by a 250-horsepower Allis-Chalmers Corliss engine, and three 160-horsepower boilers made by the Kewanee Boiler Company.

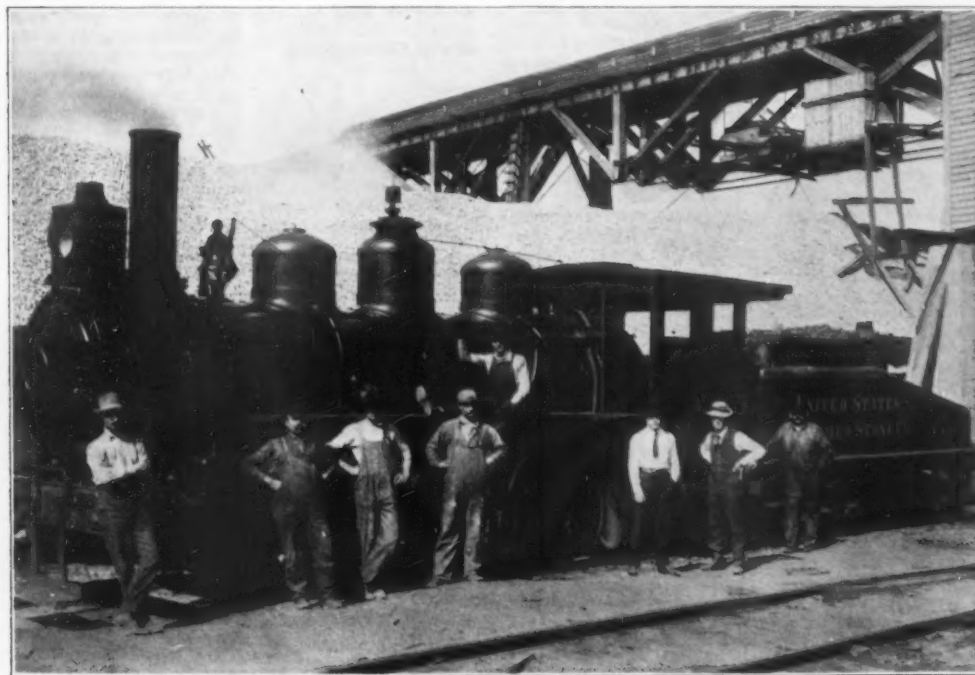
A Western Electric Company dynamo drives the hoist and the air compressor and furnishes light not only for the plant but for the quarry as well, so that operations here can be continued at night as well as day if necessary.

The air compressor is of the Ingersoll-Rand type, with a capacity of 1,050 feet. It furnishes the air for the drills used in the quarrying operations.

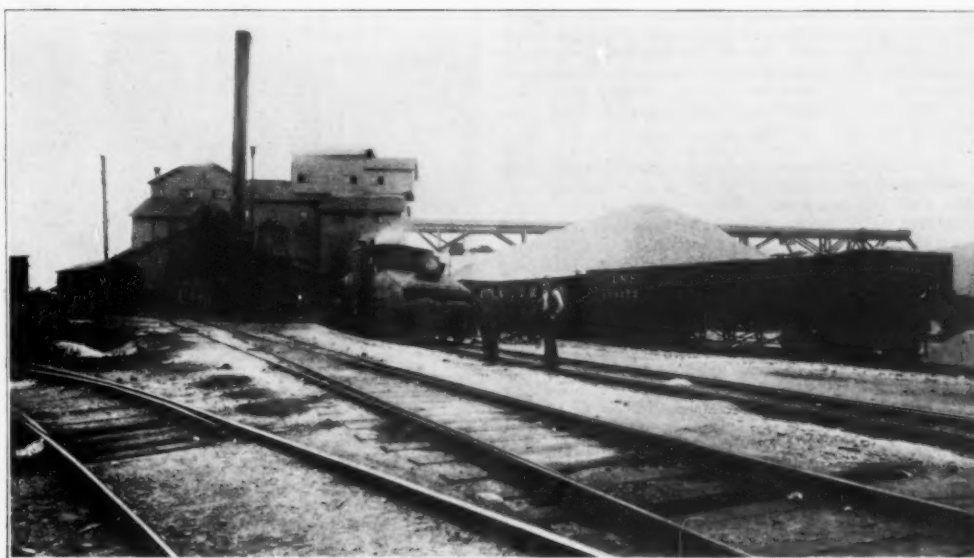
A complete storeroom containing all the necessary parts for repairing the machinery and equipment is also maintained, as well as a horseshoeing department.

At the present time the United States Crushed Stone Company have on hand about 50,000 yards of crushed stone stored in the yards in various sizes. This is the winter accumulation and takes care of the summer rush. In addition to this they have two and one-half miles of track of 73-pound rail for the accommodation of cars in the yards. A piling device is used in the yards for the proper handling of the material. This machine was manufactured by the Stevens-Adamson Company of Chicago and Aurora.

The United States Crushed Stone Company have a standing order for all the flux for the open-hearth and blast furnaces of the Inland Steel Company. They also have numerous contracts for road and



ENGINE AND CREW AT PLANT OF UNITED STATES CRUSHED STONE COMPANY.



UNEQUALLED RAILROAD FACILITIES.

street work and railroad ballast. They do all their own weighing with a scale furnished by the Budd Foundry and Manufacturing Company of Chicago.

The new plant incorporating the Edison rolls will be operated entirely by electricity furnished by the Sanitary District of Chicago, and when the same is completed this company will have a capacity of 10,000 cubic yards of crushed stone each ten hours. There will be track room for nearly 500 railroad cars. The company will, in addition to its present locomotive, have two more locomotives to handle the loaded and empty cars in and about its yards.

#### A Good Roads Convention.

BUFFALO, N. Y., July 8.—The first good roads and legislative convention of the American Automobile Association closed today. The convention did something for the cause of good roads, and it was resolved to hold another convention in 1909. By resolution this body joined in resolutions with the National Grange and American Road Makers' Association, the three bodies pledging themselves to support a federal automobile law in Congress and to work for good roads legislation in all of the states.

The following committee was appointed to see that the resolutions of the convention were carried out and to arrange for the next convention, which will probably be held in Cincinnati next June: Robert Z. Hooper, Philadelphia, chairman of the Good Roads Board of the National Grange Association; J. H. Me-

Donald, Hartford, Conn., president of the National Road Makers' Association; C. T. Terry, New York City, chairman of the Legislative Board of the American Automobile Association; S. D. Walden, Detroit, Mich., of the National Association of Automobile Manufacturers; F. B. Homer, Buffalo, N. Y., chairman of the Touring Board of the American Automobile Association; Alfred Reeves, New York City, of the American Motor Car Manufacturing Association; Judge Hotchkiss, of the American Automobile Association; and F. H. Elliot, New York City, secretary of the American Automobile Association. Each and every member of this committee are pledged to represent their organizations in every effort for the promotion of good roads throughout the United States and Canada, and they will be glad to receive information and correspondence upon this subject from parties who are interested in the promotion of good roads, and can be relied upon to assist in every reasonable way.

During the convention papers were discussed on the following topics: "Federal Appropriations for Road Improvement," "New York's Highway Code," "The New Road Era in Ontario," and "The Highways of Massachusetts."

Albert Greely will erect a stone crushing plant at Muncie, Ind., to have a capacity of 500 yards of crushed rock per day.

The West Roxbury Trap Rock Company, Boston, Mass., has been organized with a capital of \$5,000

by Thomas F. Welch and William H. Hall, both of Boston.

E. Green, of North Catasauqua, Pa., will open a new stone quarry adjoining the Lawrence Cement Mill quarry at that place and will furnish the borough with 2,700 tons of top rock and 4,600 tons of bottom rock for use on the streets of that borough at 80 cents a ton. It is said that the rock is hard as trap rock.

D. M. Kittinger has about completed his crushing plant in Upper Alton, Ill., alongside of the Vandalia Railroad. He has had a force of men working all summer in an abandoned quarry, which he has equipped with new machinery and will at once put into commission.

The Road and Bridge Committee of the County Commissioners at Wheeling, W. Va., are advertising for bids on stone for road building.

The Northern Crushed Stone Company, of Gouverneur, N. Y., will not operate their stone plant this season owing to the lack of a supply of waste stone from the marble quarries, which have not been operated this year and which this establishment depends upon for its material. There has also been but little demand for crushed rock this season.

The Schuylkill Valley Stone Company, Birdsboro, Pa., have finished their new crushing plant and have started operations with a good supply of orders on hand. They are crushing trap rock and expect to develop a very extensive enterprise. They have a fine body of stone in their quarry and will manufacture the various sizes needed in concrete construction as well as road building.

The City Council of Stroudsburg, Pa., have decided to rebuild the borough stone crushing plant destroyed by fire on June 18. The new plant will be erected on the same location as the one that was burned, but it will be constructed of concrete instead of wood.

Ray Crow, Livingston, Tenn., wants to buy a new or second-hand stone crusher of 300 yards daily capacity.

The Hocking Valley Railroad recently contracted with Columbus, O., quarrymen for 2,200 cars of ballast, all to be delivered within the next sixty days. There is still room for a few more orders of this kind.

D. L. Emanuel, Allentown, Pa., has been awarded the contract to supply crushed stone for street work by the North Catasauqua borough. He has to supply 7,000 tons of crushed trap rock at 80 cents per ton.

#### Fire Brick and Clay Products.

The Georgia Brick Manufacturers' Association held its annual meeting in Columbus July 10, with a fair attendance. The brick men present reported that business is improving, although trade could hardly as yet be called brisk. New officers elected are: President, N. J. Cruger, Albany; vice president, George O. Berry, Columbus; secretary-treasurer, P. J. Brown, Albany. The next meeting will be held at Albany.

The plant of the Detroit Vitrified Brick Company near Corunna, Mich., has been completed and is running every day. Twenty thousand brick are turned out daily. The shale from which the bricks are made is of an excellent quality and about seventy tons are taken out of the mine daily.

The affairs of the Indianapolis Composite Brick Company were wound up in probate court yesterday by Judge Merle N. A. Walker discharging the receiver, Courtney B. Whitson. The reorganization committee raised \$10,000 among the stockholders and enough more was borrowed to buy in the plant at \$19,000. It will be operated hereafter as the Composite Brick Company, Indianapolis, Ind.

Len Mattison has purchased an interest in the brick and tile yards of Mr. Clark, Wauseon, O.

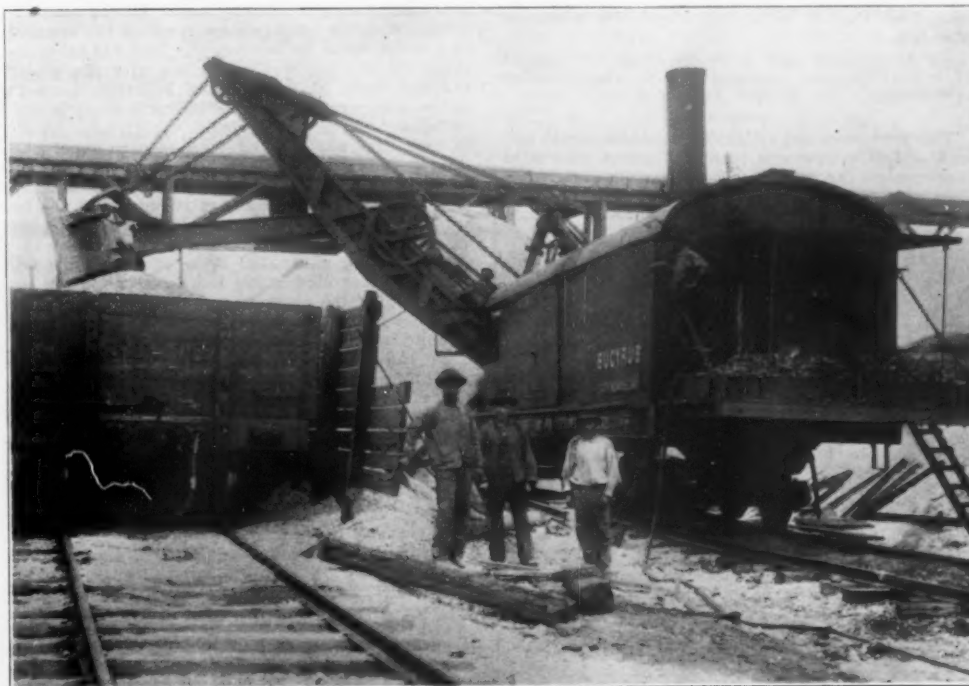
The Harbison-Walker Refractories Company will erect a plant at Birmingham, Ala., to manufacture fire brick and other refractory material, at a cost of \$250,000. H. W. Croft, the president of the company, has spent several weeks in the district looking over clay properties and is well satisfied with the outlook. Work on the plant will be started within the next few weeks. The company is represented in Birmingham by Shook & Fletcher.

The Brenham Pressed Brick and Manufacturing Company has been incorporated at Brenham, Tex. Capital stock, \$60,000. Incorporators: W. A. McVitie, H. F. Newing and J. A. Crocker.

The Recovery Tile Company has been incorporated at Fort Recovery, Ohio. Capital, \$10,000. Valentine E. Hawk and others.

The New York and New Jersey Brick Company has been incorporated at Newark, N. J., to manufacture brick. Capital, \$125,000. Incorporators: C. E. Patton, G. Tierman and F. H. Parells, Newark.

The Narragansett Fire Brick Company has been incorporated at Somerset, N. Y. Capital, \$100,000. President, William E. Fuller, Fall River; treasurer, John B. Hadaway, Swampscott; clerk, John Bright, Somerset.



THE BUCYRUS STEAM SHOVEL LOADING CAR FROM STOCK PILE.



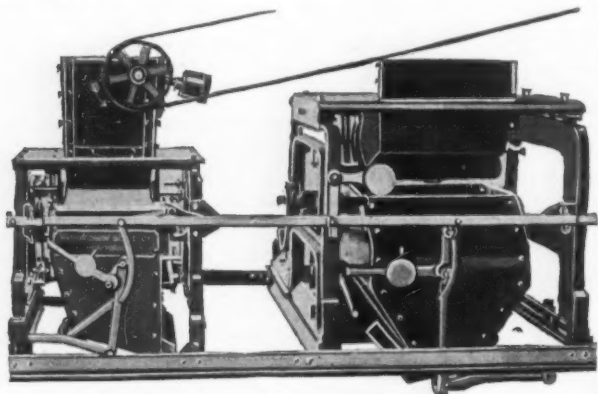
# Side Talk

The Brown Hoisting Machinery Company of Cleveland, Ohio, have just issued a new catalogue on the rapid and economical handling of coal, coke and other materials. Whenever and wherever hoisting machinery of any kind is required it would be well to consult this company, as they are specialists in this line and can always give you the right kind of information.

Illustrated pamphlets as follows will be sent on application:

- Pamphlet C—Crabs and winches.
- " D—Tramrail and trolleys.
- " E—Buckets and tubs.
- " F—Locomotive coaling stations.
- " G—Sewer and trench machine.
- " H—Ferrocement fireproofing construction.
- " I—Locomotive cranes.
- " J—Pillar and bridge cranes.
- " K—Locomotive coaling cranes.
- " L—Locomotive ore-handling cranes.
- " M—Brown sanitary water-closet shield.
- " N—Brown fireproof all-steel window sash.
- " O—Coal and coke-handling machinery for gas plants, etc.

The accompanying illustration shows a new departure of the Richardson Scale Company of New York, who are specialists on weighing machinery for weighing raw materials as well as finished cement in cement mills.



NEW SCALE OF RICHARDSON SCALE COMPANY.  
Especially designed for use in cement plants.

Recently they were approached by several firms asking if they could weigh a small amount of gypsum, which is added to the clinker in order to bring the cement to the right condition for commercial purposes. This was answered by pointing to a very recent invention of the Richardson Company which was recently installed and is now being successfully operated in the plant of the Wolverine Portland Cement Company, at Coldwater, Mich.

The installation consists of one automatic scale, which weighs 600 pounds of clinker per discharge, the clinker being delivered to the scale through a crusher which reduces the clinker into small pieces about the size of a hickory nut. The gypsum, which is fed into a hopper containing several tons, is crushed to about the same size, and this is fed into a Richardson automatic scale, which weighs from twelve to twenty pounds at a discharge.

It is not necessary for these two scales to be in close touch with each other, because the discharge is secured by means of a novel electric device, which is patented, and which prevents either scale from discharging its contents until the other one is ready.

The scales are worked by the usual bucket and beam method, so well known, and when the one machine has completed its weighing it joins the poles of an electric circuit, which when completed by the weighing of the other scale, allows the two magnets to cause the discharge of both machines.

A registering apparatus is arranged so that a record may be kept of the discharges from each scale, and this is infallible in keeping tab on the amount of cement going into the stock house.

It is said that this apparatus is now saving the labor of four men, two on each shift, and that the results are more regular and efficient than by the old method.

The C. O. Bartlett & Snow Company of Cleveland,

Ohio, have issued a new paint machinery catalogue, No. 26, which is decidedly interesting. This company manufactures crushing, elevating and drying machinery, direct and steam heat dryers and complete equipments for the economical handling of all kinds of material. They have catalogues dealing with each of these subjects, and they will be glad to send them on application.

The Arthur Koppel Company have issued many catalogues, the latest of which is one dealing with the V-shaped dump car. Every contractor and manufacturer who has raw material to handle is interested in these cars. The Koppel company manufacture portable industrial railways and cars, and their best recommendation is the fact that they have followed civilization, being used in every country in the world, so it may be said that the sun is always shining where they are in use.

The new "Concrete Porch Book" just issued by the Simpson Cement Mold Company of Columbus, Ohio, is by far the most elaborate publication concerning concrete verandas ever printed, and it should be in the hands of every concrete block maker. It is mailed free only to block makers, concrete workers, contractors, supply men, concerns which have an actual interest in concrete work, when requests are made on letter heads or accompanied by business cards. The company has found it necessary to insist upon this condition because of the multitude of requests for its literature it receives from people who have nothing but a passing interest or curiosity in it.

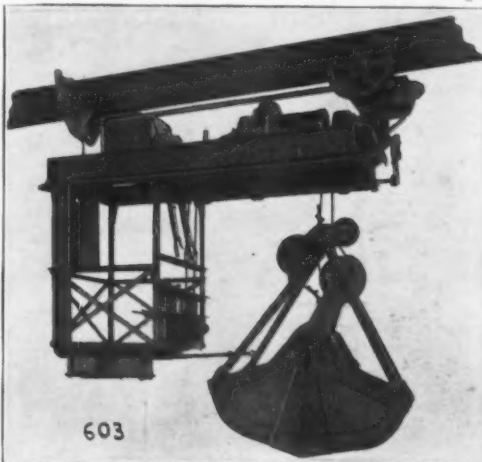
The Porch Book, 7x10 inches in size, is filled with half-tone engravings of columns, newels, finials and balustrades made in Simpson molds, as well as of houses of all kinds in all sections of the country to which porches have been built with the aid of the molds.

A new line of work is also shown, blocks of various sizes for making so-called "lattice fronts" on porches. These have the advantage of looking to be just what they are, designed especially for this purpose and no other. Some of these blocks are only 4x4x4 inches in size, and they range up through various dimensions to 4x12x16 inches. The outfit for making these blocks, ten in number, will be found very useful by all block makers, and its cost is small.

The Simpson Cement Mold Company has been in existence for three years, during which time it has been hammering at one nail only, the production of artistic molds for porch work. It has constantly been adding to its line, and it is the largest manufacturer and has the most complete line of equipment for this class of concrete work in the world. Its business has grown steadily. Simpson molds are found in every State of this country as well as in many foreign countries, from England to Argentina and from Alaska to Honolulu.

We have in the past published many illustrations of typical Simpson verandas and we show another in this issue.

The quarrymen and railroad contractors should hail with delight a dynamite that will remain thawed at temperatures above the freezing point of water.



GRAB BUCKET MONO-RAIL CRANE.



CONCRETE PORCH MADE IN SIMPSON MOLDS.

The use of nitroglycerin explosives in the winter time has always been attended by a great amount of trouble and expense due to the thawing of the dynamites, which freeze at a temperature between 45 and 50 degrees Fahrenheit. Also, when large blasts are to be fired in cold weather, the hurrying of the work of loading, so that the charges will not be frozen before the time to fire the blast, often prevents the explosive from being able to do its maximum amount of work. In addition to these points there is every winter a large number of workmen killed and injured, due to accidents caused by the careless thawing of dynamite.

One of the latest products of the E. I. du Pont de Nemours Powder Company is their new Red Cross dynamite. This dynamite contains ingredients that lower the freezing point of the nitroglycerin to 35 degrees Fahrenheit, making it possible to manufacture a dynamite that freezes only in case of extreme temperature, and then, very slowly; also, when frozen, it can be thawed very easily and quickly.

All bore holes can be properly loaded and tamped where the new Red Cross dynamite is used. There will be no excuse for careless and hurried charging in cold weather. Accidents from careless thawing will be reduced where this dynamite is used. Red Cross is manufactured in strengths from 25 to 60 per cent, on either the straight or ammonia formulae.

The mono-rail crane illustrated herewith is for use on an I beam runway and is provided with swivel trucks so as to enable it to go around a curve of short radius. It is regularly furnished with a two-line grab bucket and is very simple and durable.

Especially attention is called to the fact that both hoist and holding drums are operated by one motor, by means of friction clutches controlled from the operator's cage. The lowering of the bucket and the operations of opening and closing same are effected by gravity; this method being far more preferable to a crane having a separate motor for the hoist and holding line, since the rotative speed of the armature of a series motor in lowering the load will not exceed twice the hoisting speed; whereas with the gravity fall any speed of lowering can be attained, as the motor is inoperative when the bucket is being lowered or opened. This is an important item, especially on high lifts, and its virtues are at once apparent.

After the bucket has been lowered to the stock pile or car the clutch is closed, after which time the clutch for the holding drum is engaged and the two are utilized for lifting the load. When the bucket has reached its highest position it is sustained by a self-lubricating mechanical brake of the double friction type, thus eliminating the necessity of the constant care of the operator and the liability of dropping the bucket should his attention be interrupted at any time.

The advantages claimed for this class of coal handling machinery are: low cost of handling material, as only one man is used to load the bucket, carry it to its destination, empty it and return it to the point of starting; low cost of installation; a low maintenance charge on account of the small number and size of the working parts; large area served; and low power consumption.

The mono-rail hoist was designed and built by the Cleveland Crane and Car Company of Wickliffe, Ohio, under the direction of Thos. B. Davis, M. E., chief engineer.

The Round Rock Lime Works, of Round Rock, Tex., have made extensive additions to their kiln capacity as well as their quarrying operations, and they report the shipment of more lime this season than ever before.

## CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line  
For two insertions.....45 cents a line  
For three insertions.....60 cents a line

Eight words of ordinary length make one line. Heading counts as two lines.

No display except the headings can be admitted. Remittances should accompany the order. No extra charges for copies of paper containing the advertisement.

### EMPLOYEES WANTED

#### WANTED—FOREMAN

for mixing department of plaster mill. Must understand his business thoroughly, also to be capable of making tests and to handle men advantageously. State salary, experience and references.

Address BOX 19, care ROCK PRODUCTS.

#### ASSISTANT SUPERINTENDENT

wanted for plaster mill in the East. Competent man able to handle men in mine and mill and experienced in the calcing of stucco and in mixing wall plasters. Must send first class references with application.

Address BOX 10, care ROCK PRODUCTS.

#### WANTED

an experienced man for superintendent at lime kilns. Address, stating salary wanted.

DELPHI LIME COMPANY, Delphi, Ind.

#### PLASTER SALESMAN

wanted for western territory; references required as to character, energy and fitness. State age, experience and salary.

Address C 20, care ROCK PRODUCTS.

### EMPLOYMENT WANTED

#### CHANGE OF POSITION WANTED.

Sixteen years' experience at lime kilns, quarries and with men. Four years as salesman. Worth more than am getting. Address EXPERIENCE, care ROCK PRODUCTS.

#### EXPERIENCED ROAD SALESMAN

wants position, city or traveling. Wall plaster, cement and builders' supplies.

Address G. 3, care ROCK PRODUCTS.

#### POSITION WANTED

by young man, age thirty years, married, splendid personality, executive ability, sterling character, now assistant general sales and traffic manager for large New York State lime company; desires position of similar character with reliable company. Best reasons for changing. Would start on reasonable salary.

Address "A HUSTLER," care ROCK PRODUCTS.

### MACHINERY FOR SALE

#### PRACTICALLY NEW.

For sale—1 rotary screen, 42"x12", complete with 3 rim spiders, 3 sets clamps. Shaft 2 11-16"x15". Two rigid pillow blocks, 2 11-16", used only a few times.

Address "C. 15," care ROCK PRODUCTS.

#### FOR SALE

at a big discount, ten new rock crushers of different sizes. Capacity from ten to three hundred tons per day each. If interested answer quick. Address

E. O. MILLER, care of Box 591, Cedar Rapids, Ia.

#### FOR SALE

One Fairbank's Cement Testing Machine, good as new. 8 Brass Molds. 3 Sieves and Testing Scale. Eighty dollars (\$80) takes the outfit; first come, first served.

One Smith No. 16 tubemill, complete with pulley. Hill clutch cut-off coupling. Silex lining. Good as new. Address ILLINOIS HYDRAULIC CEMENT MFG. CO., Utica, Ill.

#### GOOD AS NEW.

Wanted to sell, one Stedman disintegrator, No. 40, also one bolter, capacity ten tons per hour, with elevator, shafting, etc. Used about one week. Apply to James S. Duncan, Toledo, Ohio, or H. H. TAYLOR, Carnegie Bldg., Pittsburgh, Pa.

#### FOR SALE.

20-ton overhead traveler, 38-foot span; electric power or rope drive. 135 feet track; strictly first-class. Also 20-ton stiff leg stone yard and quarry derrick, Scoville make. 50-foot boom, double engines on mast, revolves full circle either direction. Fine condition.

WILLIS SHAW, 171 La Salle St., Chicago.

#### FIRST-CLASS AIR COMPRESSORS AND CONCRETE MIXERS.

2—24"x24 1/4"x30" class A "Ingersoll," st. driven.  
1—22"x24"x14 1/4"x22" comp. "Norwalk," st. driven.  
2—14"x14 1/4"x18" class A "Ingersoll," st. driven.  
1—10"x10"x10" class F "Ingersoll," st. driven.  
1—8"x8"x8" class F "Ingersoll," st. driven.  
1—8"x8"x8" "Chicago Pne. Tool Co.," st. driven.  
2—14"x12" "Knowles," belt driven.  
1—11"x10" "Rabd." belt driven.  
1—10"x10" class E "Ingersoll," belt driven.  
1—8"x8" "Stillwell, Bierce & Smith-Valle," belt driven.

#### CONCRETE MIXERS.

1—No. 3 with engine on wheels, "Ransome."  
1—No. 3 with engine and boiler on wheels, "McKelvey."  
1—11 cu. ft. with eng. on wheels, "Municipal Eng. Co."  
1—11 cu. ft. with eng. and elevator drum on skids, do.  
1—11 cu. ft. mixer only on skids, ditto.  
Also engines, boilers, pumps, derricks, etc.  
L. F. SEYFERT'S SONS, INC., Philadelphia.

#### ENGINES AND BOILERS FOR SALE.

Engines—Corliss, Automatic and Throttling, all sizes from 1 to 500 H. P.  
Boilers—Horizontal, Portable and Vertical, all sizes from 1 to 200 H. P.  
Pumps, Heaters, Tanks, Sawmill and General Machinery.  
Write for our prices on your requirements.

THE RANDLE MACHINERY CO., Cincinnati, O.  
1745 Powers St.,

#### FOR SALE.

No. 9 Gates, Style K crusher (new).....\$6,250  
No. 5 Gates, Style K crusher..... 950  
No. 3 Gates, Style D crusher..... 475  
Standard gauge 5-ton locomotive crane..... 3,000  
Mundy 6 1/2"x12 double drum hoist..... 675  
Mundy 6 1/2"x10 double drum hoist..... 625  
Lidgerwood No. 72 double drum hoist..... 800  
Little Giant traction steam shovel..... 2,850  
Bucyrus 65-ton steam shovel..... 5,000  
Air compressors, drills, concrete mixers, cableways, cars, locomotives, rails, etc.

WILLIS SHAW, 171 La Salle St., Chicago.

#### CRUSHER FOR SALE.

Gates No. 4 Gyratory, in fine condition. Cheap.  
R. P., BOX 2, Sta. A., Cincinnati, O.

#### BRADY BLOCK MACHINE

for sale. It makes blocks, sills and caps up to five feet long, any thickness. Used only one season; at half price; also a continuous mixer, Little Giant, used on two jobs only.

A. J. WHITE, Big Rapids, Mich.

### BUSINESS OPPORTUNITIES

#### FOR SALE

a large tract of very valuable gypsum property, crossed by a railroad; \$5 per acre if sold at once.

For particulars apply to S. TOTZEK, Roswell, N. M.

Big Deposits: Gypsum and Cement Materials. Close to R. R., Middle Calif. Cheap fuel and electric power at hand.

W. G. SLAUSON, R. 27 Blackstone Bldg., Cleveland, O.

#### STORAGE.

Am in position to receive goods in storage in large, well-built warehouse, located at point shipping facilities of St. Louis available.

A. W. EISENMAYER, Granite City, Ill.

### PLANT FOR SALE

#### VALUABLE GYPSUM PROPERTY

for sale. For particulars apply to WM. F. MORRIS, 737 Marquette Bldg., Chicago, Ill.

#### LIME PLANT.

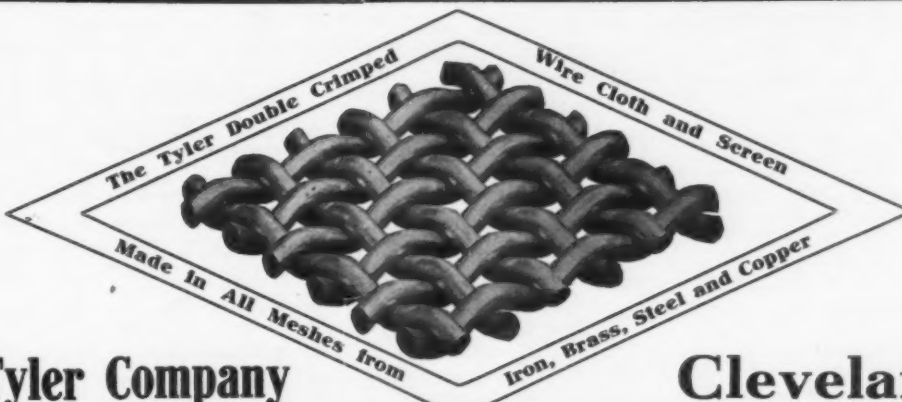
Complete plant ready to operate; big outlet; burns gas; the chance of a lifetime for a practical man. Terms very easy. Address W. S. COCHRANE, Chanute, Kan.

#### A BARGAIN.

Stone crushing plant in first class order, eight car per day capacity. One new Climax crusher and one run less than six months. Situated on R. & M. road. Contracts for all that can be crushed up to September 1. Will be sold very cheap on account of the owner's health.

JOHN C. FULLER, P. O. Box 103, Stillwater, N. Y.

The Tyler Screen is especially recommended for screening stone, sand, gravel, cement, lime, etc. It will stand extraordinary wear.



If you wish some clear, concise data on screens and their uses, send for catalogue "R. P." today.

The W. S. Tyler Company

Cleveland, Ohio

Tell 'em you saw it in ROCK PRODUCTS.



## QUARRY FOR SALE

with crushers, bins, teams and complete equipment for hauling crushed and building stone. Only local quarry furnishing for the market of a thriving city of 18,000 inhabitants. Always plenty of orders and business increasing. Will bear fullest investigation. Reasons for selling, owners have other interests and cannot give this their attention. For particulars address

C. F. SMITH STONE & BRICK CO.,  
Appleton, Wis.

## FOR SALE

a one-kiln lime plant, new and in first class condition, located in North Arkansas; 33 1/2 acres limestone running 98% to 99.7% pure carbonate of lime. Large territory, including Louisiana. Reasons for selling, don't understand the business.

Address G 6, care ROCK PRODUCTS.

## Farrington Expansion Bolts



The most secure fastening in concrete as well as in stone. Send for Samples.

H. Farrington, 45 Broadway, New York

**W. D. MEYER,**

MANUFACTURER OF

**Marble White Lime**

115 Delaware Street, QUINCY, ILL.

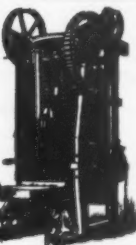
## Clay Working Machinery

Yard Supplies of all Kinds



Steam or  
Animal Power  
Brick  
Machinery

CEMENT MIXERS  
ELEVATORS  
CONVEYORS  
DRY PANS  
CRUSHERS  
BARROWS AND  
TRUCKS



"MARTIN"  
DRAWER 887  
LANCASTER, PA.

**Peirce  
City  
White  
Lime**



MAURICE GANDY FOUNDER OF THE GENUINE RED STITCHED COTTON DUCK BELTING.

**THE GENUINE GANDY**

**ROCK DUST**

Is a mortal foe to most belts. It wears them down in a short time, and the scrap heap claims its own.

Gandy Red Stitched Cotton Duck Belts give wonderful results in this kind of service. It hasn't just happened that way either—they're built for TOUGHNESS and LONG-LIFE, and never fail to outlast others under equal conditions.

The cost? BUT AS MUCH AS LEATHER. Our free booklet—"EXPERIENCES WITH GANDY"—gives the experiences of men who have found it profitable to use them. Write for it.

Gandy Belt Dressing maintains the high standard set by Gandy Belts.

**THE GANDY BELTING CO.**  
BALTIMORE - MD.

## TWENTY LONG YEARS

of time and weather tried out Ricketson's famous "Red Brick" Brand.

**COLOR**

for Mortar, Brick, Cement, Stone, etc., and proved it to be absolutely permanent. Red, Brown, Buff, Purple and Black.

**Ricketson Mineral Paint Works**

MILWAUKEE, WISCONSIN

## Red, Brown, Buff and Black



**MORTAR  
COLORS**

The Strongest and  
Most Economical  
in the Market.



Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

**CHATTANOOGA PAINT CO.**

Chattanooga, Tennessee.

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Tell 'em you saw it in ROCK PRODUCTS.

**PATENT SOAPSTONE FINISH**

PLAIN AND IN COLORS FOR WALLS AND CEILINGS

**Patent Soapstone Mortar**

Prepared in any Color for Laying Pressed and Enameled Brick, Stone Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING  
CRUSHED, GROUND AND BOLTED SOAPSTONE.AMERICAN SOAPSTONE FINISH CO  
DODGE, Proprietor. CHESTER DEPOT, VT**SAND**

HAVING completed our new plant we are now prepared to ship cleaned and dried sand especially adapted for foundry use and concrete work.

No order too large for us.

**Illinois Valley Sand Co.**  
OTTAWA, ILL.**WASHED AND SCREENED****WHITE**  
Silica  
**SAND**

JUST the right thing for molding artistic concrete work of all kinds. Pure silica as white as snow that will produce a white product for ornamental exterior and interior concrete finish. The perfectly practical facing material that has never been obtainable before. Quantity unlimited, price reasonable.

SHIPPING FACILITIES UNSURPASSED.

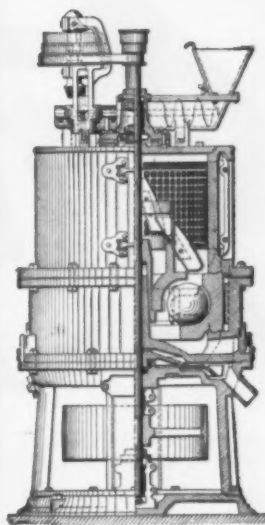
**Ballou's White Sand Company**  
Box 8, Millington, Illinois**Plaster! Plaster!****Iowa Hard Plaster Co.**HARD BY NAME. HARD BY NATURE.  
HARD TO BEAT. NOT HARD TO GET.**Iowa Hard Plaster Co.** FT. DODGE IOWA ....**THE FULLER ENGINEERING CO.**DESIGNING AND CONSTRUCTING ENGINEERS  
ANALYTICAL CHEMISTS

CEMENT MILLS A SPECIALTY

OFFICES: ALLENTOWN NAT. BANK BLDG. ALLENTOWN, PA

**WANTED—POSITION as  
CONSULTING ENGINEER**  
for Sand-Lime Brick Plants

I can possibly help you solve your troubles and increase your profits. Will take part pay in stock. Charges reasonable. Address C. 19, care ROCK PRODUCTS.

**Fuller - Lehigh  
Pulverizer Mill****The Best Pulverizing Mill  
Manufactured**

Exhaustive tests in all departments, in competition with the most approved grinding machines in use, have demonstrated the superiority of our machine.

**OUR CLAIMS:****Greater Output  
Better Fineness  
Fewer Repairs  
Dustless****Few extracts from letters received from users**

"With the four we are now ordering we will have in use 16 Fuller Mills in all, and I think you can hope to get orders from us within the very near future for quite as many more."

"We have to say for your Fuller Mill that it is unqualifiedly the best grinding device we have ever tried on our lime rock and eminently satisfactory to us."

"We are pulverizing with one Ball Mill and four Fuller Mills sufficient raw material to produce nearly 1200 barrels of clinkers per day, which record I believe can not be approached by any other mill on the market."

If interested, write us for further information

**Lehigh Car, Wheel & Axle Works**

Main Office—Catasaqua, Pa., U. S. A.

New York, 111 Broadway

Kansas City, Mo., Scarritt Building

Tell 'em you saw it in ROCK PRODUCTS.



It will pay you to use  
**The JAITE PAPER SACKS**

FOR

**Cement, Lime and Plaster**

EMBODY

**Strength and Flexibility**

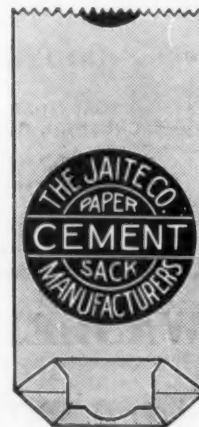
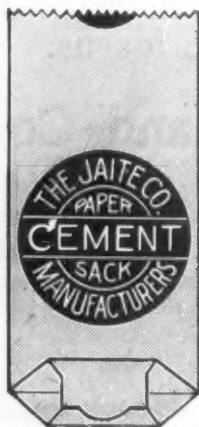
DO NOT BECOME HARD AND BRITTLE--AS THEY ARE MADE  
 RIGHT FROM START TO FINISH

Have that **LEATHERY FEEL** which makes it easy to tie.

We solicit your orders, knowing that once a customer, always a customer.

**THE JAITE COMPANY**

**BOSTON, SUMMIT COUNTY, OHIO**



**Amatite**  
**ROOFING**



This advertisement will bring to your attention the *best and cheapest ready roofing* on the market. Here is how we prove it the best.

In the first place Amatite is made in one standard thickness, whereas other ready roofings range from a thin, flimsy half-ply to a three-ply thickness.

The three-ply thickness (which by the way is only one sheet of felt) is the only kind that can be compared with Amatite.

But right here is the point. Amatite is better made, has better water-proofing material, and weighs more per square foot than the three-ply grade of other makes, and *costs much less*.

These facts make Amatite the most desirable roofing made.

But in addition to its superiority in material and manufacture, Amatite has one distinction which makes it stand out above all others. *It has a real mineral surface*

It is hardly necessary to state the advantages of such a mineral surface, the freedom from painting or coating, the perfect protection against all kinds of weather, the great durability.

This mineral surface is embedded in a layer of Pitch, the *greatest known waterproofing material*. Beneath this in turn are two layers of the best grade of wool felt—cemented together by more Pitch, making the whole a roofing that is *absolutely waterproof*.

No other ready roofing can compare with this mineral surfaced, water-proof, weather-proof, durable roof. That's why we say—*Don't buy your roofing until you have seen Amatite.*

**Free Sample and Booklet**

Send for Free Booklet and Sample today. It will pay you to get acquainted with Amatite. Address nearest office.

**BARRETT MANUFACTURING COMPANY**

New York  
 Cincinnati  
 Pittsburg

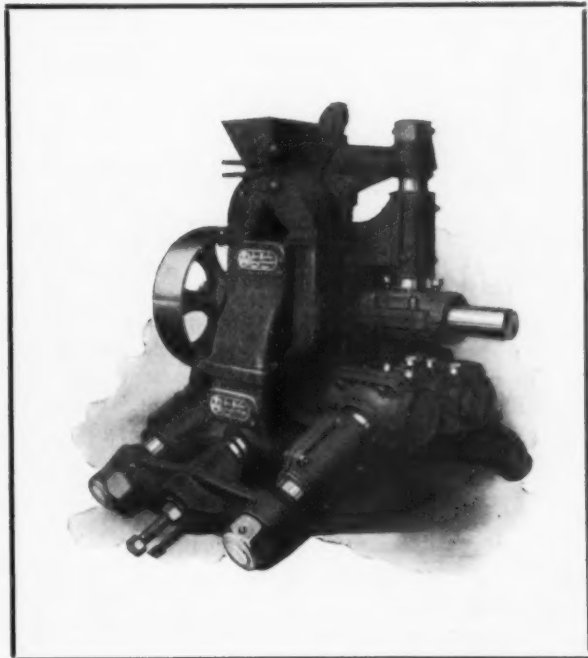
Chicago  
 Minneapolis  
 New Orleans

Philadelphia  
 Cleveland  
 Kansas City

Boston  
 St. Louis  
 London, Eng.

Tell 'em you saw it in ROCK PRODUCTS.

# THE KENT PULVERIZER



Takes one inch feed. Grinds to any fineness from 10 to 200 mesh.

## GRINDS PER HOUR WITH LESS THAN 25 H. P.

CEMENT CLINKER,	40 bbls. to	98%	20 Mesh.
CEMENT CLINKER,	12 " "	96%	100 "
		83%	200 "
LIMESTONE,	2½ tons to	98%	200 "
LIME,	4 " "	" "	100 "
ROSENDALE CEMENT,	43 bbls. "	90%	50 "
QUARTZ TRAP-ROCK,	4 tons " "	" "	40 "

You can easily figure from this what a Kent Mill would save for you.

W. J. BELL, Esq. Supt.

NEWAYGO PORTLAND CEMENT CO.,

Newaygo, Mich.

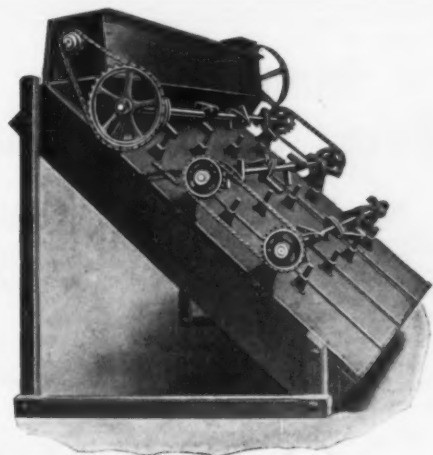
Says:—Four KENT MILLS are driven by one 75 H. P. motor

For Catalogs and Information, Address

## KENT MILL CO.

170 Broadway,

NEW YORK.



## NEWAYGO SEPARATOR

INCLINED VIBRATING SCREEN

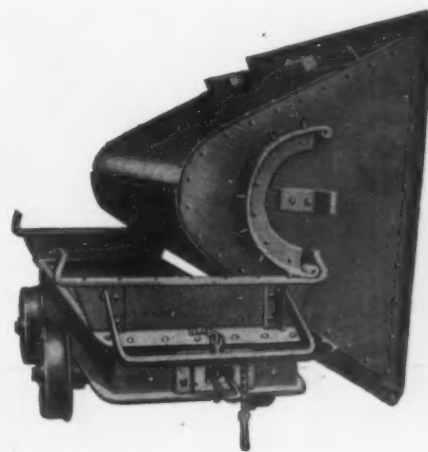
THE ONLY SHAKING SCREEN  
THAT WILL NOT SHAKE  
ITSELF TO PIECES

SCREENS FROM ½ Inch TO 200 Mesh ACCURATELY

SEND FOR CATALOGUE

### STURTEVANT MILL CO.

105 Clayton St., BOSTON, MASS.



## Rocker Dump Car

For Quarries, Gravel  
Pits and Concrete Work

We manufacture CARS of all styles and sizes.  
Also ELEVATOR BUCKETS, ELEVATORS,  
REVOLVING SCREENS, HOISTS, SKIPS.

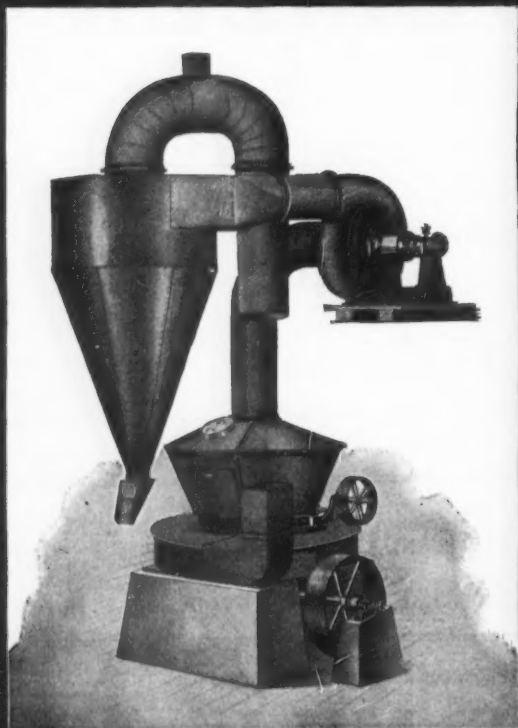
If you need any of the above write us for prices;  
we can quote you the lowest and give you what  
you want.

### H. B. Sackett Screen & Chute Co.

4212-4226 State Street, CHICAGO, ILL.

Tell 'em you saw it in ROCK PRODUCTS





## SAVING MONEY IN YOUR GRINDING ROOM

*Is not all that*

## THE RAYMOND SYSTEM OF AIR SEPARATION WILL DO FOR YOU

In every case where this system has been installed it has proven itself an economy not only in the actual grinding and separating of materials reduced to powder but in saving money or improving the work of other departments of the factory. The reading of our book may surprise you as to what we can do for you.

That you have no fault to find with your present methods is no proof that there is not a better way. It will cost you nothing to read the book. Just ask us for it. The reading of it may mean thousands of dollars in your pocket.

### USE THE COUPON

**RAYMOND BROTHERS IMPACT  
PULVERIZER CO.,**  
141 Laflin St., CHICAGO



SIGN THIS COUPON, TEAR OFF AND MAIL

RAYMOND  
BROTHERS  
IMPACT  
PULVERIZER  
CO.  
141 Laflin St.,  
Chicago

Please send your book

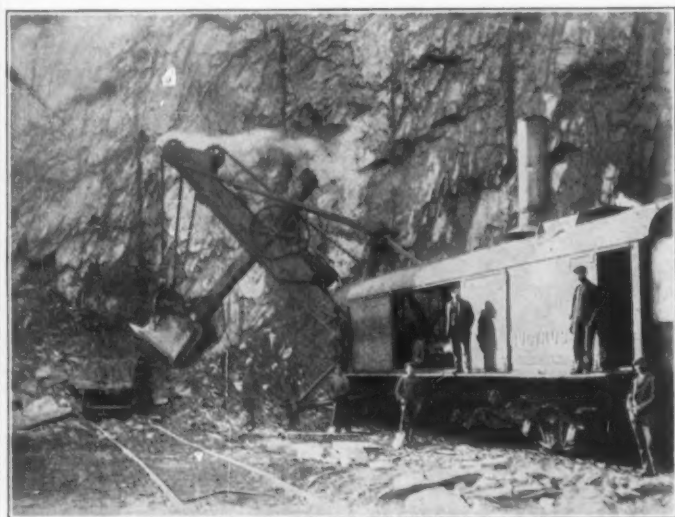
"MAKING AIR MAKE MONEY"

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

36

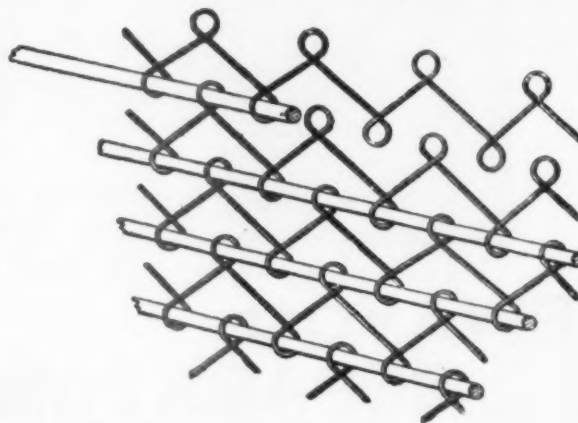


**95-B Bucyrus Steam Shovel**  
in  
**CEMENT ROCK**

We Build Steam Shovels for  
Quarry Stripping, Cement Mining  
or Loading Crushed Stone

**THE BUCYRUS CO.**  
SOUTH MILWAUKEE, WIS.

## Mankedick's Reinforced Concrete Structure



Adaptable to all possible forms of construction, such as Arches, Columns, Silos, Floors or Walls. Uniform strength in every position. Any desired size of rods, wire or mesh may be used that may be necessary for the work required.

### Rapid, Cheap and Simple Construction

This Patent is for sale. If not sold soon I will make arrangements to have the material manufactured for the market.

**CHAS. MANKEDICK, Patentee,**  
P. O. Box 397. SULLIVAN, INDIANA

## THE SIMPSON CONCRETE PORCH BOOK HAS CREATED A SENSATION



We have, in reply to inquiries received since last month, sent this beautiful new literature to hundreds of block makers and others. Their letters of acknowledgment are almost extravagant in their praise of it.

### IT IS A REVELATION

To those who have never before known what really artistic concrete porch trimmings are. And it has brought us a

### RUSH OF ORDERS

Which is the best evidence of its attractiveness.

We have plenty more copies and will mail them for the asking to building contractors and cement workers who send us their business cards or letter heads. We will mail it to those not "in the trade" for 10 cents, stamps or coin. Every copy costs us 20 cents. The Book is of the greatest interest to every home owner for its many handsome engravings of fine verandas.

**THE SIMPSON CEMENT MOLD CO.**  
498 NORTH HIGH STREET COLUMBUS, OHIO, U. S. A.

## PERFECTION IN BLOCK MAKING

If you wish to attain this you should combine these three important features:

### Wet Process Face Down Damp Curing

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincibles, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE.

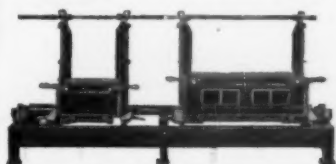
### THE PETTYJOHN COMPANY

614 North Sixth Street Terre Haute, Indiana

## HERCULES

This Name Stands for the BEST in CONCRETE MACHINERY

We are Manufacturers of  
Concrete Block Machines  
Concrete Mixers  
Curb and Gutter Outfits  
Cement Users' Tools



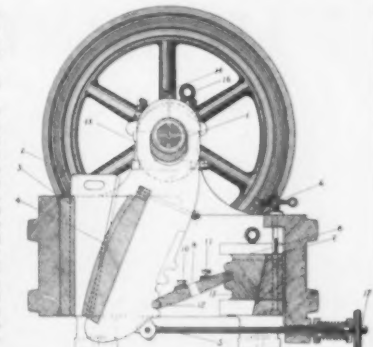
Our handsome illustrated catalogue will be sent free to all interested.

**Century Cement Machine Company**  
179 Main St. W., ROCHESTER, NEW YORK

HERE is what you want to complete your plant so as to keep up with the other fellow. That is what we have had to do with our

### X-L-All line of cement tools

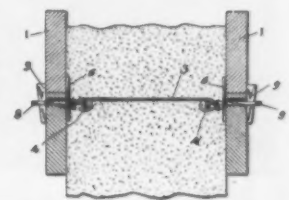
We have been adding from time to time and intend to add more. From the illustration you will note we are now manufacturing a crusher. We knew this had to come to complete the concrete business because there is so much waste in the gravel as it comes from the sand pit, and besides the concrete product requires these round stones to be broken up so as to give better bondage, than by using it as it comes from the sand pit. And besides with a crusher you use all the material, no waste. We can furnish you with a crusher from 5 ton to 150 ton per day. We also manufacture a full line of sand elevators and screens together with mixers, block machines, brick machines. In fact, almost anything for the concrete man. Send for catalog.



**Burrell Mfg. Co., Bradley, Ill.**  
102 GROVE STREET

## New Type of Wall Form

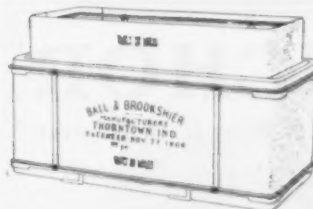
Investigate this new system; boards held firmly while concrete is being placed; easily and quickly removed; makes wall plumb and uniform in thickness.



SAVES { LUMBER  
LABOR  
TIME

Write for circular explaining the system and the appliances:

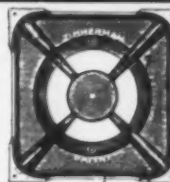
**Charles Dietrichs,** 15 Kaufman Avenue,  
Little Ferry, New Jersey.



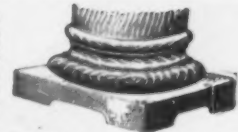
### Hoosier Cement Burial Vault Molds

All steel, no wood to shrink, swell and warp. Always ready, without repairs, and good for a lifetime. Best cement proposition known. 500 per cent profit. Telescopes and adjusts for making TWELVE sizes of cement vaults. Makes vaults with circle corners, preventing cracks. Carries strongest portion of walls. For particulars address

**BALL & BROOKSHIER, Thorntown, Indiana**  
Patentees and Mfrs. Ask for Circulars Nos. 9 and 10



Ask your architect to specify The Zimmer Patent Metal Base and Ventilator to prevent your porch columns and floor from rotting. Send for circular A. Thousands in use.



**C. E. Zimmerman, Syracuse, N. Y.**

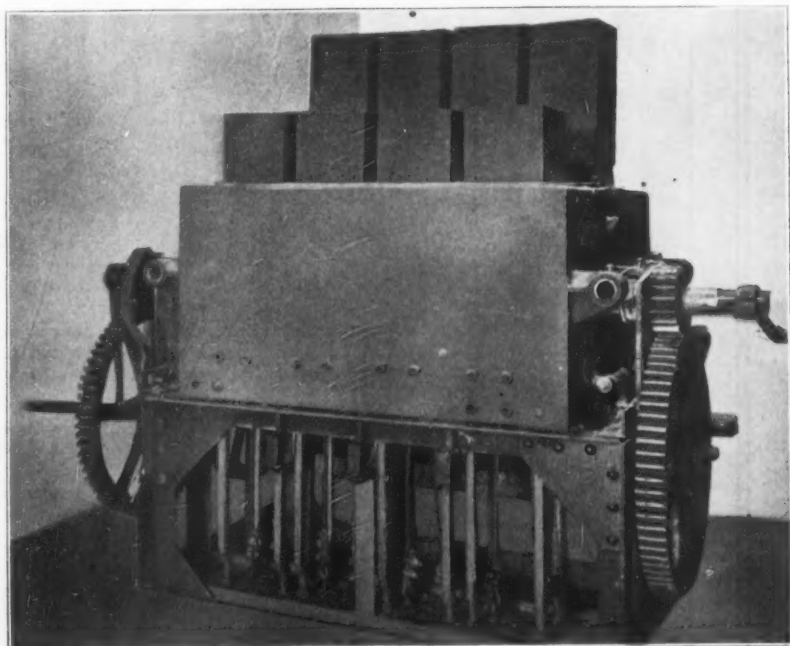
## NEW SYSTEM OF SEWER CONSTRUCTION!



Steel Centers and Formers for building Concrete Culverts, Sewers and other hollow structures in their permanent location. By the use of these Molds, no lumber is required for forms. The walls of the sewer are made uniform. The back filling is carried on as the work progresses. The centers and formers are easily set up and quickly removed when the concrete is set. There is a saving of concrete. They will save the contractor, time and money. A little booklet will tell you all about them. Write for it. Address  
**HICKSON'S Sewer Mold Co.,**  
Mt. Gilead, Ohio



# FIREPROOF STRUCTURAL TILE OF CONCRETE



400 Tiles per Day With Three Men.

Any shape and size required, are successfully and profitably produced wherever sand, ground rock, furnace clay or other concrete aggregates are obtainable, using any standard quick setting Portland cement.

Concrete Partition Blocks, Conduits and Sewer Pipe are made with big profit even in a small one machine shop.

Supply dealers can equip a small plant right in their yard and turn sand and gravel into high priced building materials.

## EXCLUSIVE TERRITORY SECURED TO INVESTORS.

Responsible parties investing in a plant for the manufacture of structural tile and sewer pipe by the Pauly patented system are fully protected in their immediate market with exclusive control of the machinery. Machines are all furnished upon a lease contract which is as strong as an insurance policy. Complete demonstration with every machine installed, using the local material that it is to work with. Positive guarantee with every machine installed and every equipment or no trade. Let us demonstrate with a sample of your aggregate material free.

The Merit of the Material Speaks for Itself.

If you own a sand supply, crusher refuse or furnace slag is handy—investigate for factory propositions.

**CONCRETE STONE AND SAND CO.**

A. A. PAULY, INVENTOR.

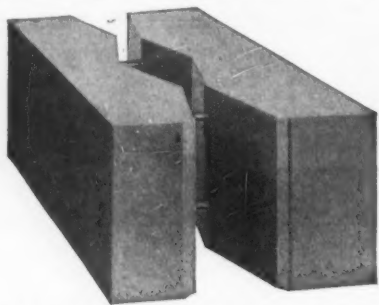
**Youngstown, Ohio**

Eminent Engineers and Architects indorse the Pauly System of Concrete Tiles and Pipes. Here is where dealers can get "all the profit."

## THE ANCHOR

Continuous Air Space Block Machine

Makes Blocks with a real air space that we guarantee Frost and Moisture Proof



Standard Anchor Machines make blocks that lay in the wall 8 in. by 24 in., and any width from 8 in. to 12 in.

Anchor Jr. Machines make blocks that lay in the wall 8 in. by 16 in., and any width from 8 in. to 12 in.

**ANCHOR CONCRETE STONE COMPANY**

Write for new 1908 catalogue and special low prices.

**Rock Rapids, Iowa**

## "The Only Way"

TO MAKE FOUR THOUSAND 4, 5, 6, 7, 8, 10, 12, 14, 15 OR 16 INCH CEMENT DRAIN TILE IN TEN HOURS IS TO INSTALL A

## SCHENK CEMENT TILE MACHINE

"OVER SIXTY MACHINES IN OPERATION"

Ask The Man Who Has One

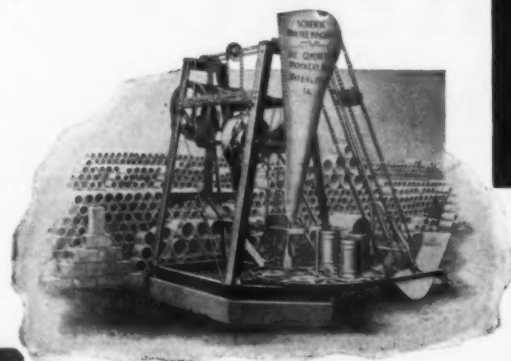
—OR—

**The Cement Tile Machinery Co.**

74 RATH ST.,

**WATERLOO, IA.**

THE  
LARGEST  
CONCRETE  
MACHINERY  
PLANT IN  
THE WORLD



Tell 'em you saw it in ROCK PRODUCTS.

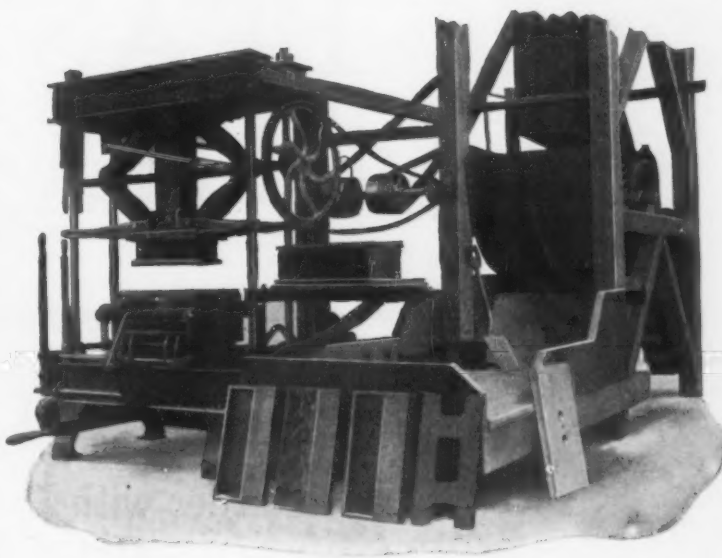
# PERFECTION AT LAST ATTAINED IN THE CONCRETE BLOCK INDUSTRY

**THE PERFECTION POWER BLOCK MACHINE** is the only Power Block Machine on the market, making a Hollow Concrete Building Block under Heavy Pressure and at Great Speed.

Machines have been in constant use since July 1st, 1905, with practically no expense for repairs.

The machine handles sand, gravel, crushed rock, slag and coloring materials perfectly.

All materials accurately measured, thoroughly mixed and uniformly pressed under 200,000 pounds pressure.



Makes 8, 9 and 12x8x24 inch blocks in five faces, and fractional and angle blocks.

Machine can be arranged to make Two Piece and Faced Blocks if desired.

All machines delivered, set up and put in operation to show a guaranteed capacity of 60 blocks (12x8x24 inch) per hour with 5 men.

Blocks perfectly cured in 24 hours in Vapor Curing Kilns of our own design.

Full details, catalog, testimonials, etc., sent upon request.

## THE PERFECTION BLOCK MACHINE CO.

KASOTA BUILDING :: MINNEAPOLIS, MINN.

### "The Svenson is Easily the Simplest and Fastest Mixer Ever Built"

Quit wasting money and making bad concrete with that "batch" machine. Don't fuss and lose time with complicated mixers. Let us tell you about this simple, strong machine.

### The Svenson Concrete Mixer

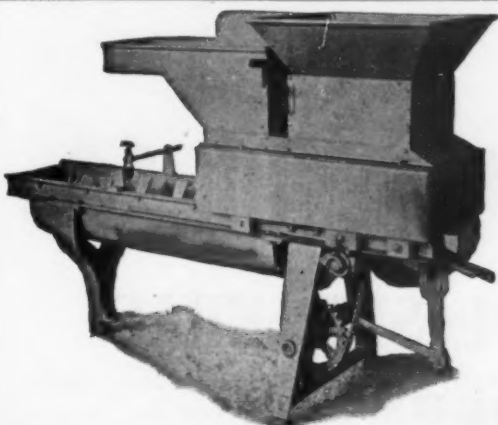
Has only five moving parts, all on one shaft. It keeps going and it keeps the men going.

We want to tell you our ideas on proper mixing, for the "Svenson" mixes dry, then wet—the only scientific way. And it proportions the mix positively, just the way you set it.

Send for Catalogue.

### Svenson-Shuman Machine Co.,

1602 Bessemer Bldg., PITTSBURGH, PA.



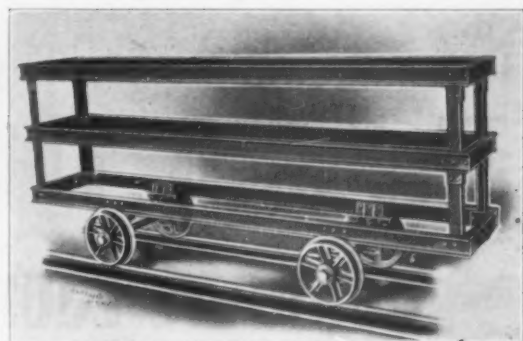
### "KENT" CONTINUOUS MIXER

"The Mixer that measures and Mixes"

"You fill the Hopper, the Mixer does the rest"

Simple, reliable, economical, durable and moderate in price

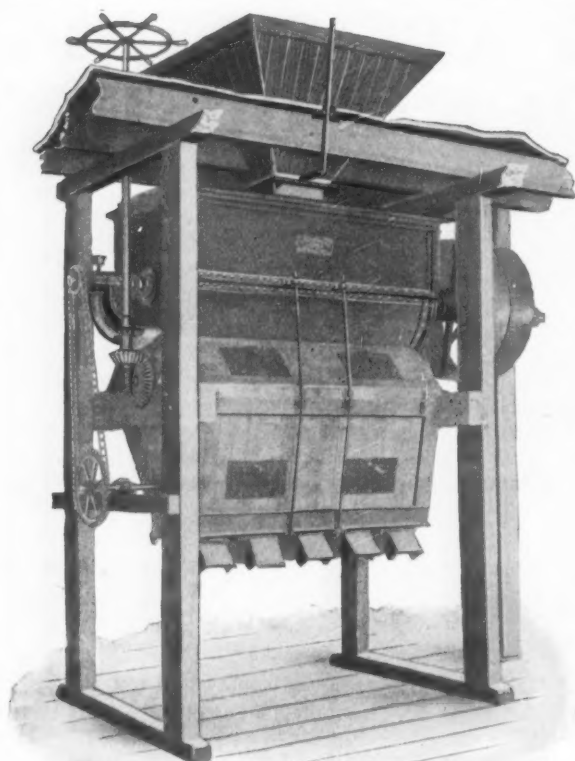
Write for Catalogue and Prices to  
**The Kent Machine Co.**  
306 N. Water St., Kent, O.



The "KENT" Block Cars, Transfer Cars, etc.

Tell 'em you saw it in ROCK PRODUCTS.





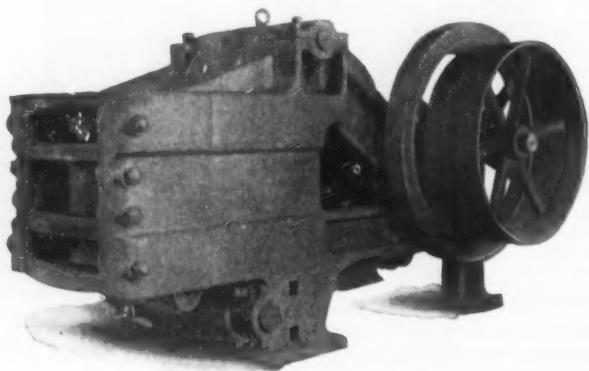
# ENTERPRISE PLASTER MIXER

NOISELESS,  
DURABLE and EFFICIENT.

For Mixing Hair Fibre, Wood Fibre and  
Retarder with Dry Plastering  
Materials.

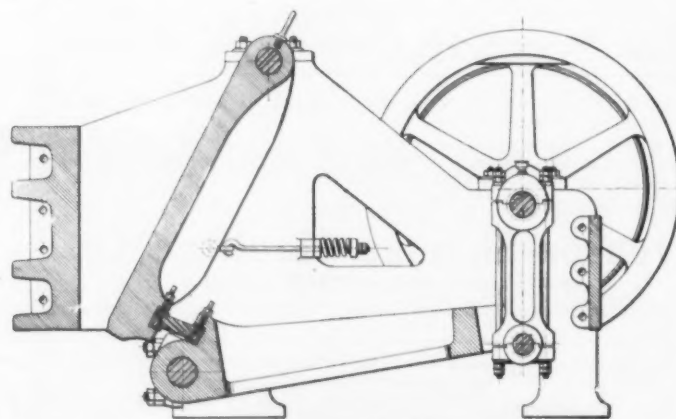
## Calcing Kettles

Jaw and Rotary Crushers for Gypsum, Reels,  
Vibratory Screens, Hair Pickers and Trans-  
mission for applying power.



EHRSAM NO. 4 JAW CRUSHER.

This machine will handle large chunks and reduce from 30 to 40 tons  
of Gypsum per hour to 2½-inch maximum or smaller if wanted.



NO. 4 JAW CRUSHER, SHOWING SECTIONAL VIEW OF NIPPER  
The jaw opening at inlet is 18x28 inches.

## The J. B. Ehram & Sons Mfg. Co.,

BUILDERS OF

### COMPLETE EQUIPMENTS FOR PLASTER MILLS

**Enterprise, Kansas**

Tell 'em you saw it in ROCK PRODUCTS

**FARREL ORE AND ROCK CRUSHER**

USED IN ALL PARTS OF THE WORLD - LARGE RECEIVING CAPACITY - SPECIALLY DESIGNED AND CONSTRUCTED FOR HARDEST KIND OF WORK

**COMPLETE CRUSHING PLANTS OUR SPECIALTY**

• SEND FOR CATALOGUE •

**EARLE C. BACON, ENGINEER.**

FARREL FOUNDRY & MACHINE CO. HAVEMEYER BUILDING, NEW YORK

**Have You Light Lifting to Do?**

If so, you cannot afford to get along without one of our

**Parker Derricks**

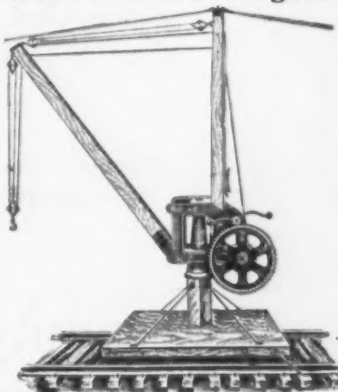
Made in Two Sizes

No. 1 Derrick Lifts 1,500 Pounds.  
No. 4 Derrick Lifts 4,000 Pounds.

They are Light, Simple, Safe, Easily Set Up and will do more work in 2 hours with 3 men than can be done in 10 hours with 6 men any other way.

Write for Our New Catalogue.

**Parker Hoist & Machine Co.**  
937 N. Francisco Ave.  
CHICAGO



GET THE BEST

**Finest Line of Gypsum Machinery**

MADE

**KETTLE CRUSHER NIPPERS**

ASK FOR CATALOG OF

**MOGUL NIPPERS, OPEN DOOR POT CRUSHERS**

Best Mills in the United States Have Them

**DES MOINES MFG. & SUPPLY CO., Des Moines, Iowa, U. S. A.**

## BROWNHOIST LOCOMOTIVE CRANE



Equipment of Sand Dock in the Harbor of St. Louis

Equipped with

### "BROWNHOIST" Grab Bucket

Such an equipment is equally efficient in the handling of broken stone, gravel, etc., or without the Grab Bucket for the lifting and transporting of heavy materials.

Write us for catalogues.

## The Brown Hoisting Machinery Co.

Main Office and Works, CLEVELAND, O.

Branch Offices, Pittsburg, Pa., New York City

Tell 'em you saw it in ROCK PRODUCTS.





## AUSTIN GYRATORY CRUSHER

The World's Leading Rock and Ore Breaker

The Only Automatically Lubricated Gyratory Crusher

8 Sizes—Capacities 40 to 2000 Tons.

Simple Construction (Saving Repairs)  
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Result: EFFECTIVE, DURABLE AND MAXIMUM CAPACITY.

Plans and Specifications Submitted for Any Size Plant.

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## Modern Grinding Machinery

KOMINUTERS for Granulating  
TUBEMILLS for Pulverizing

Davidson Tubemill especially  
adapted for Sand-Lime  
Brick Work

Silex Linings for Tubemills  
Best Quality Dana Flint Pebbles  
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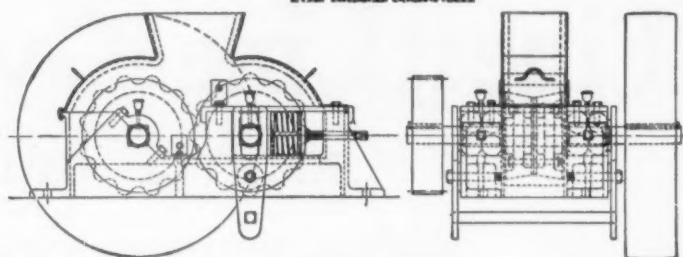
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ENGINEERS

41 Cortlandt St.

NEW YORK

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24" & 30" COMPOUND CRUSHING ROLLS



## Perfect Crushing Rolls

For Ores, Minerals, Chemicals, Etc.

Our crushing rolls are built in size and style to suit the requirements

Built of the most suitable metal for the requirements. Novel Patented Device for always keeping the rolls parallel

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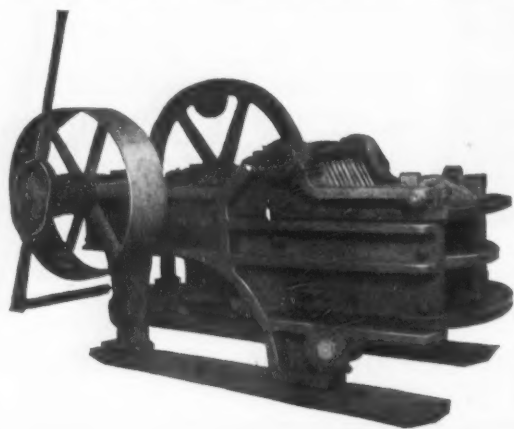
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WESTERN REPRESENTATIVE

Mr. C. Van Deventer 706-707 First National Bank Bldg. Chicago, Ill.



## CRUSHERS

for soft rocks, burnt lime, etc.

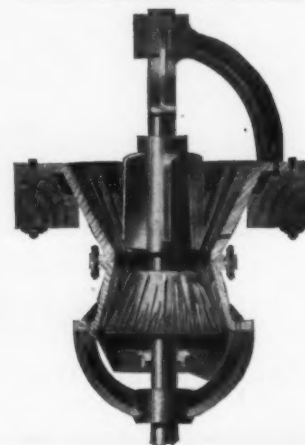
### GYPSUM MACHINERY

We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

SPECIAL CRUSHER-GRINDERS FOR LIME HYDRATORS

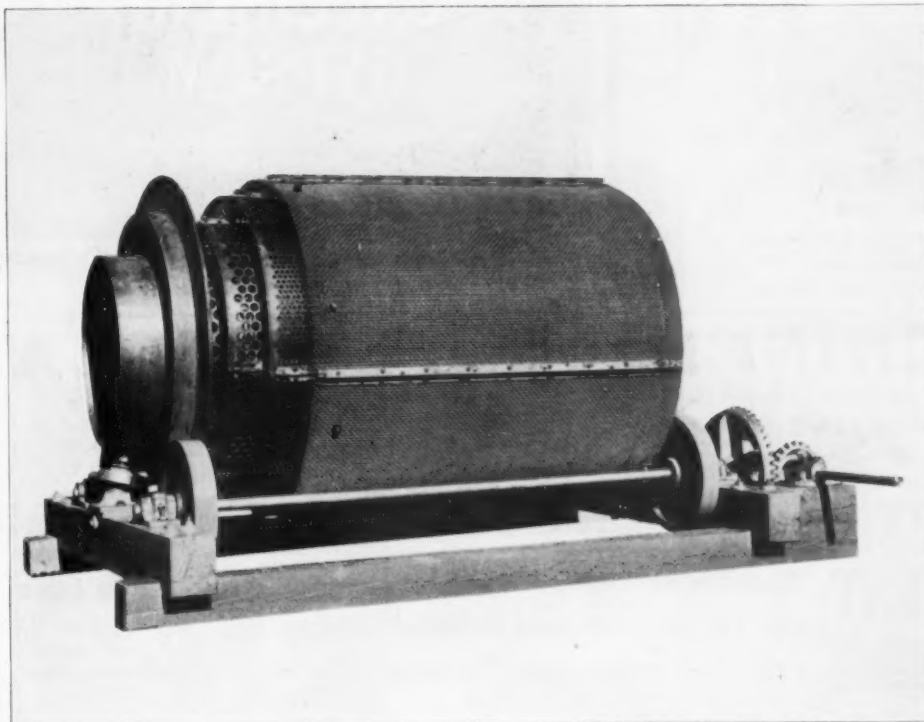
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# JOHN O'LAUGHLIN'S SCREEN



made solely by Johnston & Chapman is the

## ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

## NOW

will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars, address:

**Johnston & Chapman Co.**

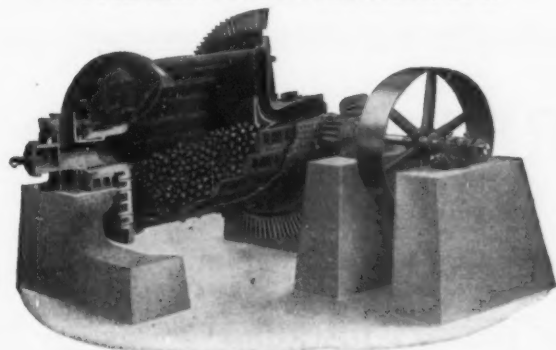
1333 to 1345 Carroll Ave., CHICAGO, ILLINOIS

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.

## Cement Mill Machinery

FOR EITHER WET OR DRY METHOD OF MANUFACTURE

CRUSHERS—DRYERS—KILNS—COOLERS  
TUBE MILLS—BALL TUBE MILLS, ETC.



Our Ball-Tube Mill shown above is a distinct innovation in the line of cement-making machinery, and is destined to entirely replace the old-time ball mill for the coarse grinding of cement clinker, because of its much greater grinding capacity per horse-power and the extremely low cost for repairs.

**NO SCREENS TO CLOG OR WEAR OUT  
THEREFORE NO SHUT-DOWNS**

Our entire line of Cement Mill Machinery is distinctive in character and design and is acknowledged by discerning engineers to be superior to any other on the market.

Our new Catalog No. 7 gives full and complete details. Send for it.

**POWER AND MINING  
MACHINERY COMPANY**

CUDAHY (Suburb of Milwaukee) WISCONSIN

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## RAW MATERIAL GRINDERS

### New Williams Universal

FOR TUBE MILL FEED

800 BARRELS 22 HOURS  
95 PER CENT THROUGH 20 MESH  
HORSE POWER 40 TO 50

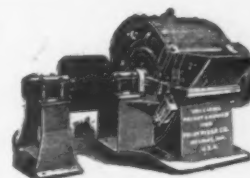


WE ALSO GRIND  
GYPSUM, LIME, COAL AND SHALE

### Vulcanite Grinder

FOR ROLLER MILL FEED  
TAKES MATERIAL FROM  
GYRATORY, DIRECT

CAPACITY 20 TONS HOUR  
FINENESS  $\frac{1}{2}$  IN.,  $\frac{1}{4}$  IN. AND  $\frac{1}{8}$  IN.  
HORSE POWER 40 TO 45  
1,300 MILLS NOW IN USE



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WORKS:  
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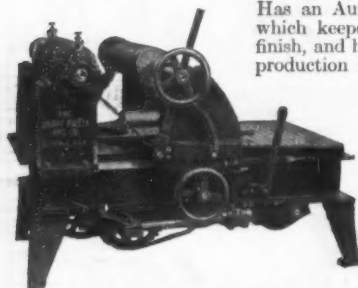
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Los Angeles, Cal., 1531 Maines Ave.

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## The Leonard Wood Fibre Machine



Has an Automatic, Proportional, Increasing Feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines.

Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors but write for descriptive circular and terms to

**The Shuart-Fuller Mfg. Co.**  
ELYRIA, OHIO

THE SHUART-FULLER MFG. CO., Elyria, Ohio

Gentlemen:—What is the very best, cash-with-order price you will make on another Leonard Fiber Machine? We want no other machine but yours. It is all and more than you claimed for it, and is running steady ten hours every day and doing fine work.

Yours truly, GUARANTY WOOD FIBER PLASTER CO., Chattanooga, Tenn'

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**CALCINING  
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NO KETTLES  
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Great Saving in Cost of Manufacture and Quality of  
Product Guaranteed.

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FOR THE MANUFACTURE OF

**WOOD FIBRE PLASTER, FIRE PROOFING  
AND KINDRED PRODUCTS**

We furnish the latest improved FIBRE MACHINE, (fully patented) also FORMULAS, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contracts.  
WRITE FOR TERRITORY

**The Ohio Fibre Machinery Co.**

J. W. VOGLESONG,  
GENERAL MANAGER

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## KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS

Elastic in its nature, can be applied with 25 per cent less labor and has 12½ per cent more covering capacity than any other similar material

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322 W. Genessee Street

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# RETARDER Wood Fiber

**THE OHIO and BINNS RETARDER CO.**  
PORT CLINTON, OHIO

**Reliable Stucco Retarder=Strong=Uniform in Strength=**  
Duplicate power plant (electric and steam power) installed so as to preclude any possibility of shut down and consequent shut down of mixers who depend upon us for their supply of Retarder. We have a capacity large enough to supply every retarder user in the U. S. and Canada, and some to spare for Europe. Our mills are fireproof in every particular. Write us for prices and information.

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PORT CLINTON, OHIO

# STUCCO—Lycoming Calcining Company

Garbutt, Monroe County, N. Y.

Enlarged, Re-equipped, Better and Larger than ever. Capacity, 250 tons per day. First Stucco mill built at Garbutt. Now located on two R. R. systems. Shipping facilities unsurpassed. Ten wall plaster Companies now using our Stucco exclusively, under contract. Write for price.

MAIN OFFICE, - - - WILLIAMSPORT, PENNA.



**BEST  
BROS.**

**Keene's  
Cement**

FOR

**PLAIN AND  
ORNAMENTAL  
PLASTERING**

EQUAL IN QUALITY TO FOREIGN MAKES

MILLS AND QUARRIES:

MEDICINE LODGE, KANSAS  
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**Stucco  
Retarder**

Strong  
Uniform  
Fine Ground

**RETARDER**

We are the oldest Retarder firm in the United States, and above is our motto. New fire-proof plant and prompt service.

FREE SAMPLE ON REQUEST

**Chemical Stucco Retarder Co.**

WEBSTER CITY, IOWA.

INCORPORATED 1895

**RETARDER**

**UNIFORM AND STRONG**

Suitable for all kinds of Stucco and Plaster. Write for sample.

**Pennsylvania Retarder Co.**

Mosgrove, Pennsylvania

**A Profitable Opportunity**  
**FACTORY FOR SALE**  
**ELCESSOR STUCCO RETARDER CO.**  
**BRADDOCK, PA.**

Owing to the death of the owner, John W. Elcessor, the new and complete plant is offered for sale at a bargain by order of Orphans Court.

*Address for Terms, and Details*

**W. M. LAIRD, Executor, 622 Liberty Ave., Pittsburg, Pa.**



LET OUR POLICY  
of manufacturing a uniform and thoroughly reliable stucco  
**INSURE**  
you against producing an inferior wall plaster  
**The Niagara Gypsum Company**

MANUFACTURERS OF

**Niagara  
Brand**

STUCCO  
NEAT CEMENT PLASTER  
WOOD FIBRE WALL PLASTER  
SANDED WALL PLASTER  
FINISHING PLASTER  
PREPARED FINISH  
SUPERFINE PLASTER

Our electrically equipped mines and mills are now in operation with  
a capacity of 300 tons per day and we assure you of prompt service.

Mines and Mills: Oakfield, N. Y.

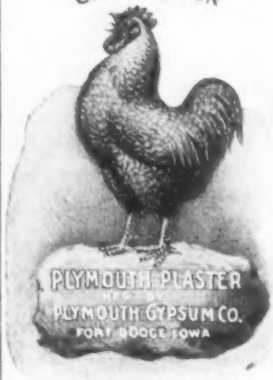
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# Empire Gypsum Co.

The Empire Gypsum Company's new mill, with capacity of  
200 tons daily, is in operation and they are prepared to  
promptly furnish the best quality of Empire Stucco, Em-  
pire Neat Plaster, Reliance Wood Fiber Wall Plaster and  
Excelsior Wall Plaster Sanded.

## Garbutt, Monroe County, New York.

CROWING FOR



**PLYMOUTH  
CEMENT  
AND  
WOOD FIBER  
PLASTER**

The Brand that's Made from Pure  
Gypsum Rock.

WRITE US FOR PRICES AND  
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**Plymouth Gypsum Co.**  
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PLYMOUTH PLASTER  
PLYMOUTH GYPSUM CO.  
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THE  
**"INDEPENDENT"**  
BRAND

Is Manufactured Only by

**American Independent Gypsum Co.**  
Fort Dodge, Iowa

UP-TO-THE-MINUTE PLASTER MAKERS

**Works Fine. Try It  
You Will Like It**

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# Builders' Supply Dealers Can MAKE TWO PROFITS!



## Both Manufacture and Sell Rader Patented Plaster Board

If you are selling plaster boards you are making one profit. Why not manufacture them and make both **manuf-  
turers'** and dealers' profits? With

### RADER'S PATENTED MOULDING TABLES

you can manufacture the best plaster boards on the market and at less cost than the largest manufacturers, enabling you to compete with any brand, both in quality and price.

### PLASTER BOARDS

are rapidly displacing all kinds of lath, being fire and vermin proof, lower in price, more rapid and economical in construction, stronger and more durable.

### RADER'S PATENTED PLASTER BOARDS

made only with **Rader's Patented Moulding Tables** are the most satisfactory now on the market. Cannot be broken as can others, thereby eliminating all risk of loss by breakage in transportation or general rough handling. They have to be sawed in two. Each side of the board is adapted to different purposes thus having a double advantage over any other make. Three plants are now in operation to meet a growing demand.

### A COMPLETE PLANT CAN BE INSTALLED AT A SMALL COST

as the **Rader** apparatus is licensed at a very low price and only a very small space is required for its operation. The device makes boards from  $\frac{1}{4}$  to 1 inch in thickness.

### TERRITORY AND RIGHTS CAN BE LICENSED

with the exception of the New England and Middle Atlantic states which have already been secured by one of the largest plaster manufacturing companies in the East.

Write us for Samples and Further Information.

# Gustave Rader Co.

1105 Metropolitan Ave., Brooklyn, N. Y.

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# NOW! is the Psychological Moment

Neither "Cheapness" nor extravagance will prevail—but sane, sound, optimistic, conservatism. If the best shows the most real economy, people will buy the best. The call will be stronger than ever this season, for—

## U. S. G. HARD PLASTERS

White Plasters, Gray Plasters, Neat Plasters, Prepared Plasters, Wood Fiber Plasters, Finishing Plasters, Stucco, Etc., Etc.

## SACKETT PLASTER BOARD "Instead of Lath"

Builders will be in a hurry. Sackett Board is an immense time-saver, and has the advantage of being the modern fire-proof lath! Sackett is well advertised—very salable and profitable. Clear "velvet" added to your plaster business.

And don't forget—

## "UNIVERSAL" The No-Lime Finish

Cut down your lime losses—minimize your lime troubles! Take advantage of the tremendous "Hit" that "Universal" has made—stock up with "Universal."

Profit by U. S. G. Advertising and U. S. G. Co-operation. Make your work easier and your profits larger.

For information on any plaster commodity or brand, literature, quotations or hurry-up orders—address our nearest office.

**United States Gypsum Co.**  
CHICAGO CLEVELAND MINNEAPOLIS  
NEW YORK SAN FRANCISCO

to prepare to share fully in the country's returning prosperity. The tide has already set in—don't wait for the big wave to wash by you and leave you gasping for breath—get into the swim and go with the wave.

The election year bugaboo has been discounted—confidence is re-established—staple stocks are low—wheel's turning—idle workman are returning to work, banks are sound, crops and prospects splendid—**everything** points to a steady and sure return to genuine prosperity.

The building world is wide awake, and getting busier every minute.

And that calls for Plaster and building materials. How is your stock? Put your ear to the ground and hear the forward march of prosperity! **Strengthen your faith—get long on plaster stock at once!** But stock up with the right brands—the brands of merit and reputation—the **salable brands**—i. e.—the U. S. G. Brands of **Hard Plaster**—and the profit-adding specialties, Sackett Plaster Board, and Gypsinite, and "Universal," etc., etc.

We are ready! In addition to our other plants and equipments, we have just completed a

## Big New Mill and Warehouse at Eldorado, Oklahoma

from which we are prepared to ship "Eldorado" and other top-notch grades of Gray Plaster—our Standard Brands of White Plaster and other plaster commodities, **on short notice**. This is of special interest to our Dealers in the Southwest, but will so relieve our other plants, that we can now offer to Dealers in **all** sections, a class of Service such as they have seldom, if ever, enjoyed.

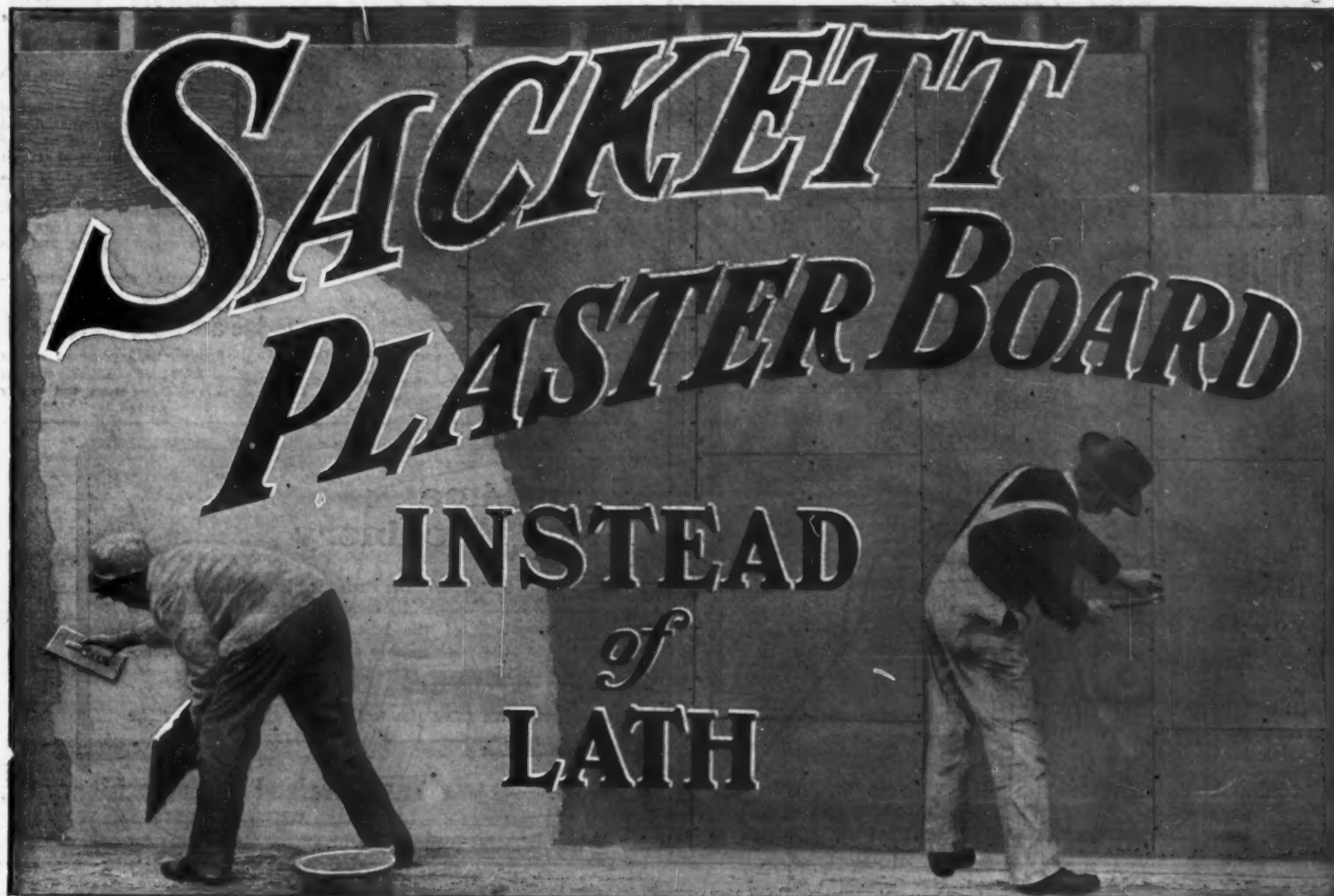
Buy your plastering materials from the House of Progress—the House of Co-operative service.

(Address inquiries for information, quotations and orders, to our nearest office.)

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**United States Gypsum Co.**  
**Chicago Minneapolis Cleveland**  
**New York San Francisco**



### FIREPROOF AND ECONOMICAL

SACKETT PLASTER BOARDS have been successfully used since 1891 in thousands of buildings of all classes, including small cottages, prominent hotels, costly residences, churches and theaters.

Walls and ceilings of Sackett Plaster Boards will be **DRY AND READY IN HALF THE TIME** required when lath is used, as less than half the quantity of water is needed.

**Less moisture** means less damage from warped and twisted trim and woodwork.

Their superior insulating qualities make warmer houses with less fuel. The first cost is no more than good work on wood lath, and less than on metal lath.

Sackett Plaster Board is an efficient and economical **FIREPROOFING** not only for walls but between floors, and for protecting exposed wooden surfaces in mills, warehouses and industrial structures. It is also used extensively instead of lumber as outside sheathing under weather boards.

Sackett Plaster Board comes in sheets or slabs 32x36 inches ready to be nailed direct to the studding, furring or beams.

For all kinds of Buildings its use is ideal. It speeds construction; it lessens building cost; it reduces fixed charges for insurance; it makes fire resisting walls and ceilings, and gives absolute satisfaction.

Carried in stock by up-to-date building material dealers everywhere.

Booklet showing buildings all over the country where these boards have been successfully used with **SAMPLES** and name of nearest dealer furnished on application to any of the following General Distributors.

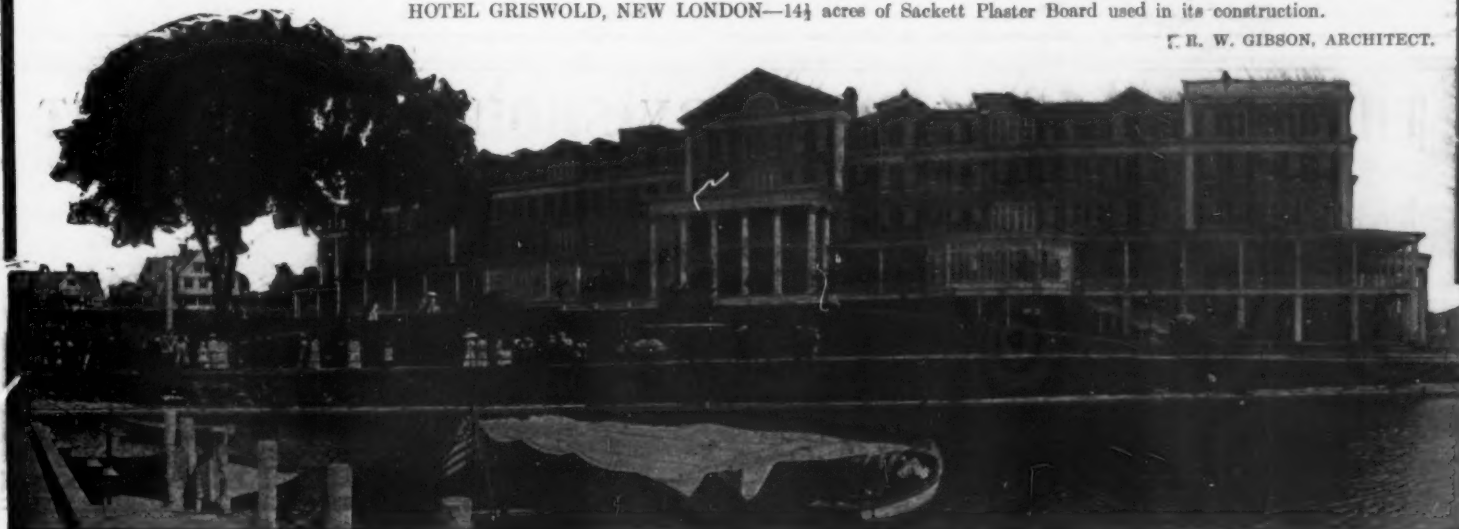
**UNITED STATES GYPSUM CO.**  
CHICAGO CLEVELAND MINNEAPOLIS

**GRAND RAPIDS PLASTER CO.**  
GRAND RAPIDS, MICH

**SACKETT PLASTER BOARD CO.**  
17 BATTERY PLACE, NEW YORK CITY

HOTEL GRISWOLD, NEW LONDON—14½ acres of Sackett Plaster Board used in its construction.

F. R. W. GIBSON, ARCHITECT.



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## The Scranton Electric Drill

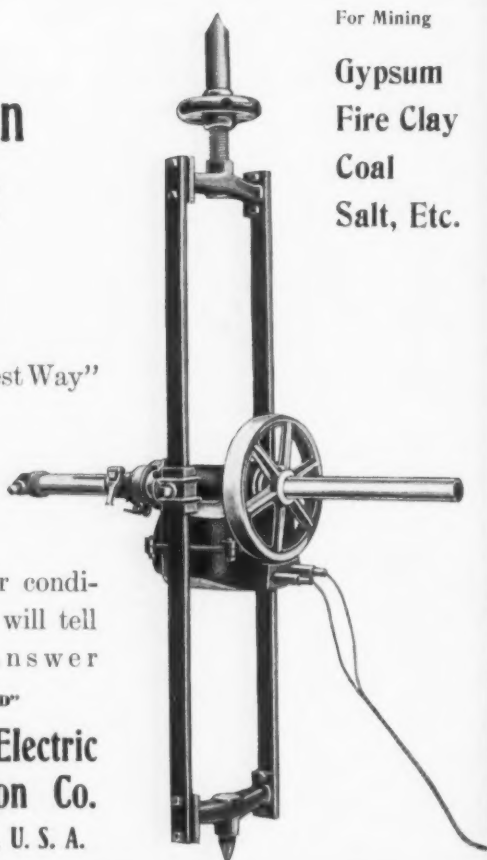
"The Cheapest Way"

Tell us your condition and we will tell you the answer

DEPT. "D"

**Scranton Electric Construction Co.**

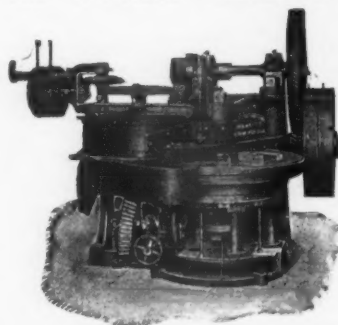
Scranton, Pa., U. S. A.



For Mining

Gypsum  
Fire Clay  
Coal  
Salt, Etc.

## The American Sandstone Brick Machinery Company, SAGINAW, MICH.



DON'T confuse our practical system with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our Plants are installed under the supervision of practical engineers who know how Sand-Lime Brick should be made, and can be made.

We have practical plants running successfully, to show to prospective investors.

### We are Not Scientists.

We produce results, because we are the oldest practical Sand-Lime engineering company doing business in the United States, and we defy contradiction. Incorporated April 1902.

Improved Saginaw Rotary Presses are now being built right or left hand, with extra table for making face and fancy brick, on which double pressure is exerted. Our patented brush does the work of one man, and keeps the plunger plates clean.

## Sand-Lime Brick Machinery

We make "The Perfection Press." It is simple and powerful, convenient and accessible, is built of the best materials throughout, and the workmanship and fittings are honest, accurate and guaranteed.

We have the testimonials that prove "The Perfection Press" produces results.

**The Cleveland Brick Machinery Co.**  
WICKLIFFE, OHIO



## HOWELL'S Celebrated Ball Bearing Heavy Geared Post Drills

For boring anything that an Auger will penetrate.

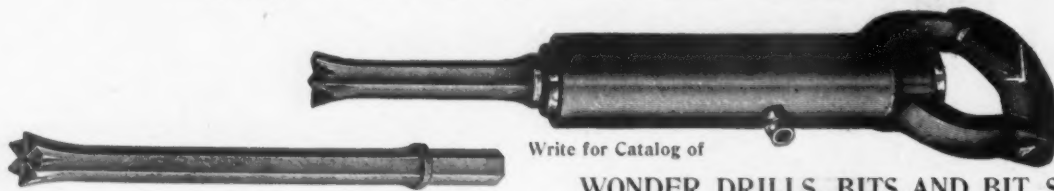
*Awarded Gold Medal, St. Louis.*

We make 40 different styles machines run by Hand, Compressed Air and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum and Plaster Rock. Send to day for our handsomely Illustrated Catalogue.

**HOWELL MINING DRILL CO.,** PLYMOUTH, PA., U. S. A.  
(ESTABLISHED 1878.)

## THE DRILL THAT NO QUARRY SHOULD BE WITHOUT

Simplest of Construction, Light, Convenient, Easily Handled, Always Ready and Drills from 2 to 10 Inches per Minute in Hard Rock. Every Machine Guaranteed.



Write for Catalog of

WONDER DRILLS, BITS AND BIT SHARPENERS

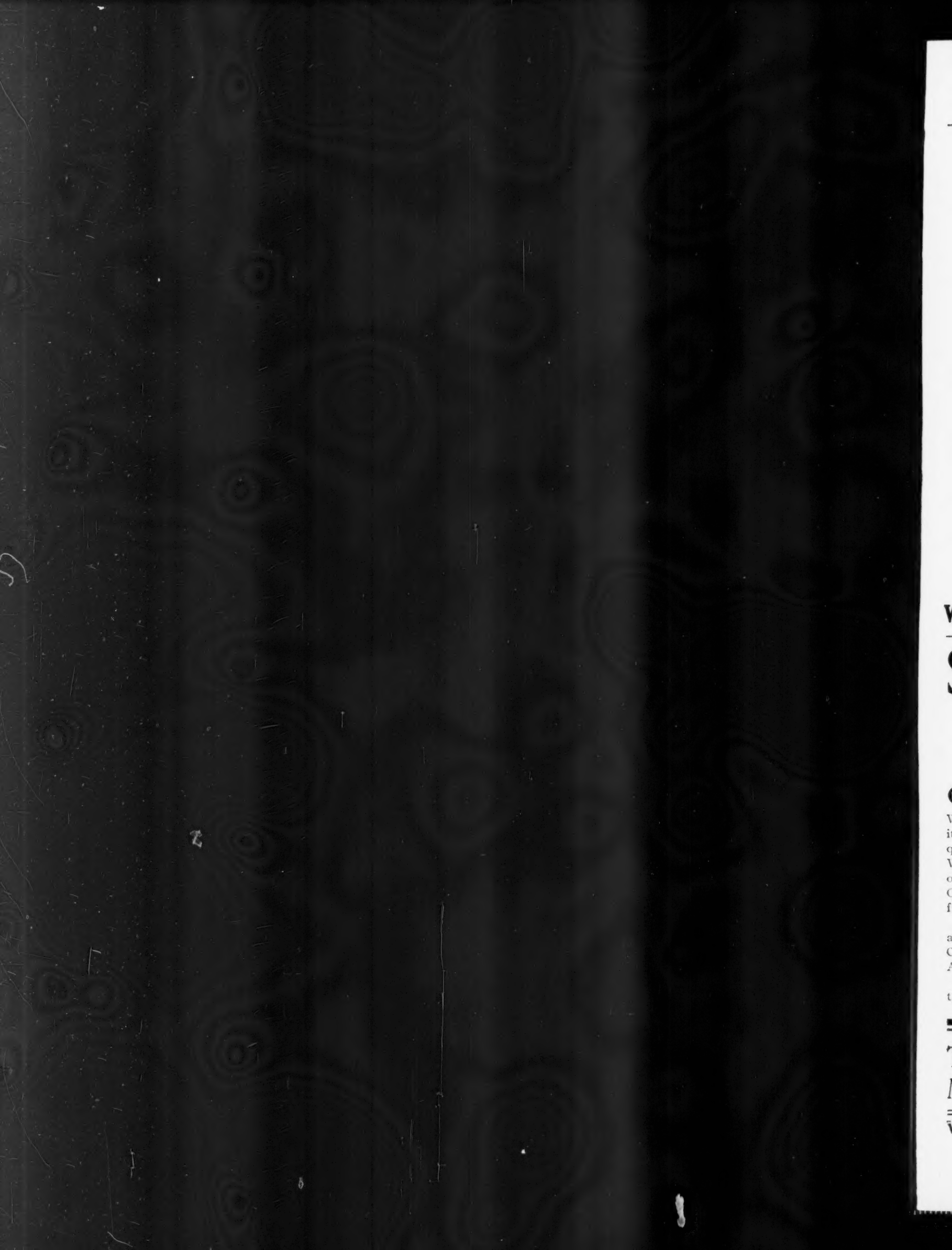
**Hardsocg Wonder Drill Co.**

**Ottumwa, Iowa, U. S. A.**

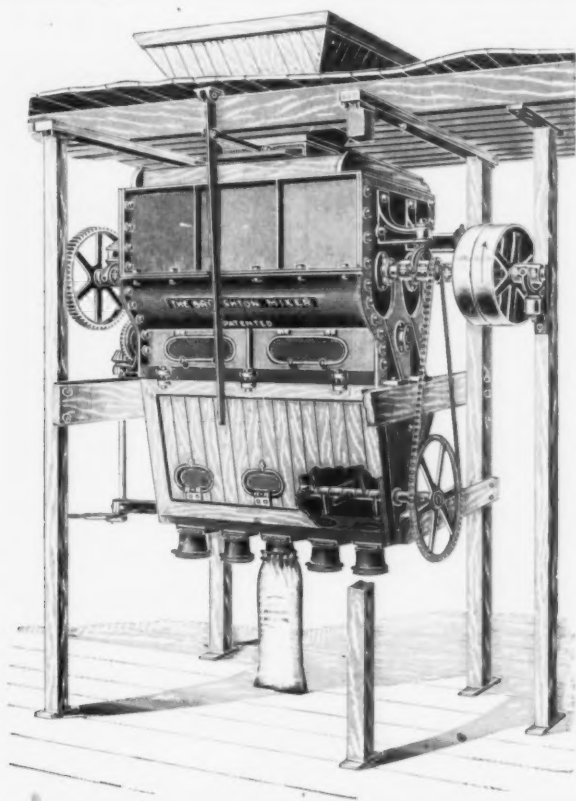
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The most thorough and efficient  
Mixers of Plaster, Cement and  
Dry Materials. Send for Circular.

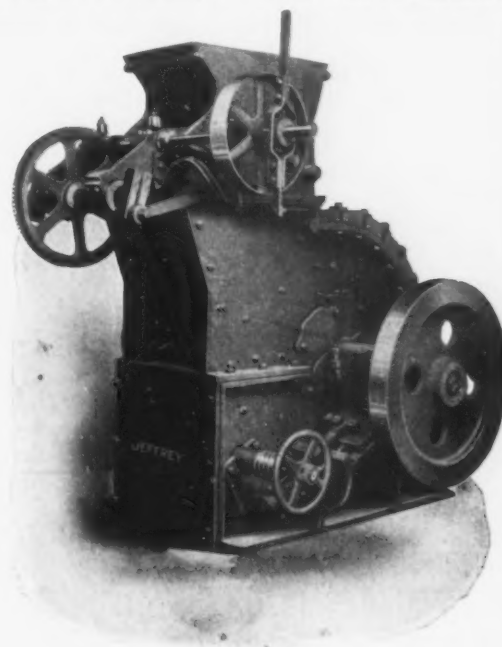
**W. D. DUNNING, Water St., Syracuse, N. Y.**

## JEFFREY SWING HAMMER PULVERIZER

Equipped  
with  
Automatic  
Feed,  
Worm Gear  
and  
Screw  
Lowering  
Device.

Send for  
Catalog  
No. 31.

Free  
Crushing  
Tests.



**THE JEFFREY MFG. COMPANY**

Columbus, Ohio, U. S. A.

New York Chicago Boston St. Louis Denver Montreal

## Sand-Lime Brick Machinery

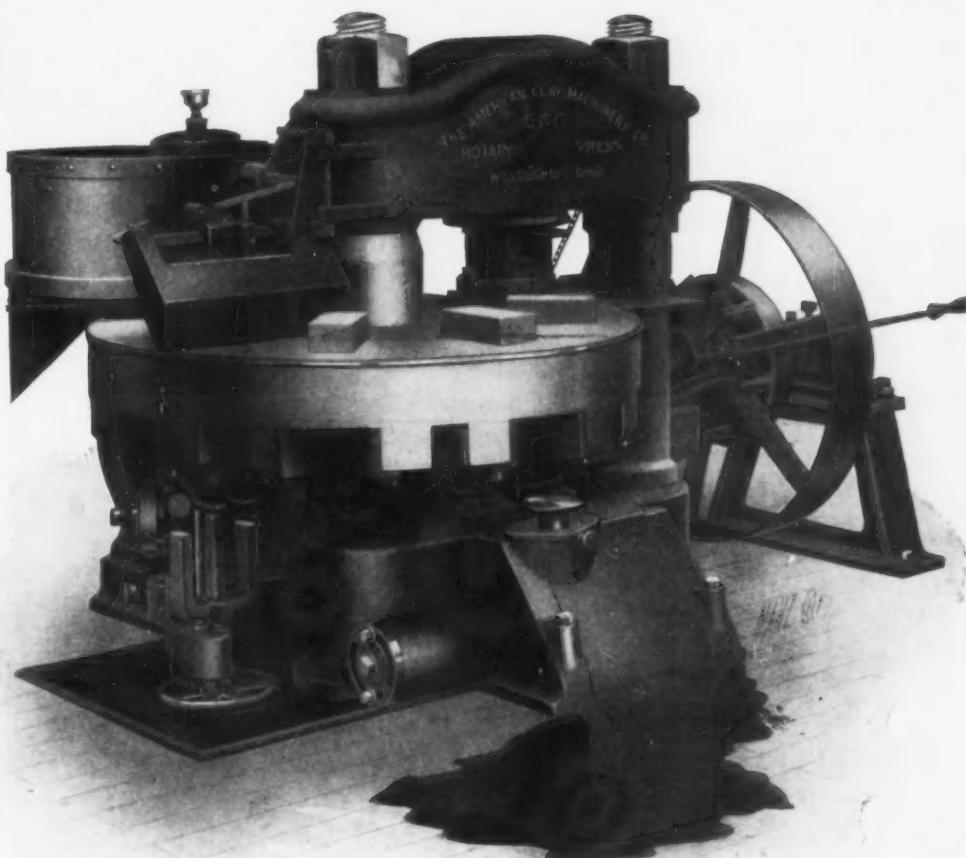
OUR Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.

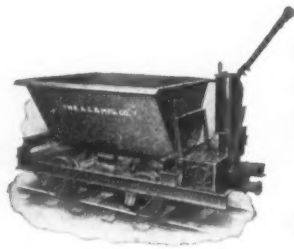
**The American Clay Machinery Company**

WILLOUGHBY, OHIO, U. S. A.





WE BUILD  
**CARS**  
FOR



No. 217-E  
Side Dump Car  
Equipped with Motor

QUARRIES,  
MINES,  
CEMENT  
WORKS  
AND  
GENERAL  
USE



No. 277  
Steel Mines and Quarry Car



No. 145-C  
Pressed Steel Top, Ball Bearing  
Turntable; Patented

SWITCHES,  
FROGS



No. 600  
Steel Dumping Bucket

RAIL,  
TURNABLES

**THE ATLAS CAR & MFG. CO.**  
CLEVELAND, OHIO.

**NOT A BRICK DISPLACED!**  
**NOT A MARK OF EROSION!**

⌚ This was the finding upon recent examination of the big tube of the Niagara Falls Power Company, when the great torrent was unharnessed after nearly twenty years of unceasing flow through its mile and a half of winding tunnel.

THESE BRICKS WERE LAID IN

**Giant Portland Cement**

MANUFACTURED BY THE

**American Cement Company**  
PHILADELPHIA, PENNSYLVANIA

# The Standard American Brand **ATLAS PORTLAND CEMENT**



ALWAYS UNIFORM

**Productive Capacity for 1908 over 14,000,000 bbls.**

Send for our books on concrete construction: "Concrete Construction about the Home and on the Farm." Free upon request. "Concrete Cottages." Free upon request. "Concrete Country Residences." Express paid \$1.00. "Reinforced Concrete in Factory Construction." Free to Architects, Engineers and Mfrs. who contemplate building. Cloth bound Copies 50 cents.

**The Atlas Portland Cement Company**

Dept. U

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